

APPROVED FOR RELEASE: 2007/02/08: CIA-RDP82-00850R000200090049-7

25 JUNE 1980

(FOUO 12/80)

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JPRS L/9163

25 June 1980

USSR Report

MILITARY AFFAIRS

(FOUO 12/80)

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GENERAL KIRYAN INTERVIEWED ON AFGHANISTAN

Milan PANORAMA in Italian 18 Feb 80 p 61

[Interview with Soviet General Mikhail Mirtofanovich Kiryan, by Carlo Rossella, date and place not given]

[Text] Maj Gen Mikhail Mirtofanovich Kiryan is a member of the Red Army General Staff. PANORAMA talked with the general on the Soviet intervention in Afghanistan, on the international crisis, on detente, and on the likelihood of a renewed arms race.

Question: What is your view of the international situation?

Answer: Very complicated. However, if you recall the immediate postwar period, there is nothing new about it.

Question: The Americans say it's all the Soviets' fault, that it was the Soviet intervention in Afghanistan that started it.

Answer: Lies. Carter has been looking for a pretext for some time now.

Question: And so you gave him one.

Answer: Right now, there is an organized campaign under way on that pretext, to put the Soviet Union in a bad light. That's why the situation has deteriorated.

Question: What does the USSR think will happen now?

Answer: We are watching events calmly, without hysteria. The one thing that worries us is that this might undo all the work we have done so far on detente.

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Question: Might the Soviet Union's calm just now have something to do with its military superiority vis-a-vis the West?

Answer: That's not the way it is. During the SALT II negotiations, everybody was convinced that we did have parity. Certainly we have not been able to change the balance over the past 6 months. In the course of the negotiations, we weighed and calculated, along with America, all the possible risks. We are still ready to work out the respective divisions. America, though, doesn't want to do that, and talks of Soviet superiority. The truth is that NATO controls millions of men in Europe. And I can tell you that, in Europe, the USSR does not have the capability of fielding and maintaining an army of equal strength. And now, of course, there are the cruise and Pershing missiles...

Question: Does this mean that since the cruise missiles and the Pershings will be deployed in the NATO countries, the USSR will have to produce similar weapons in order to balance European theater forces?

Answer: Even if we don't go directly to Pershing-type or cruise missiles, we are going to have to spend money on new weapons and come up with systems to offset the adversary's efforts. And we do not like that, at all. We prefer to spend our money on peaceful undertakings. We cannot, however, surrender our security.

Question: Was the intervention in Afghanistan undertaken by the USSR in defense of its own security?

Answer: We went into Afghanistan because we were asked to come there by that country's legitimate government. Had we not moved in, with our limited contingents in very short order, the Americans would have been in Kabul. In what form? There is no telling. All we know is that when the American military attache saw us coming, he broke down and wept in the airport waiting room.

Question: When will the USSR pull out of Afghanistan?

Answer: When there are no more threats on Afghanistan's borders.

Question: Things are going to drag on for a while there, since the Americans, the Chinese, the British, and the Pakistanis have decided to support the Muslim guerrillas.

Answer: We do not call organized gangs guerrillas. Until such time as the Afghan army is able to liquidate such foreign-organized gangs by itself, Soviet troops will have to take a hand in the struggle against such gangs.

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Question: Does that mean that the Soviets are already fighting against the Afghan guerrillas?

Answer: As of now, Soviet troops are not taking part in the fighting, because the big groups now being trained across the borders have not yet entered the field. There are only scattered bands there now, and the Afghans can handle the situation.

Question: What losses has the USSR suffered? Is it true that there was fighting with regular units of the Afghan army right after [your] arrival in Kabul?

Answer: There have been no battles against Afghan units. When there is fighting there are men killed, and nobody has seen any bodies. Our troops have occupied certain positions, and they do not leave them. During the night, at first, bandits attacked scattered soldiers. There was, however, nothing you could call actual fighting. In the Afghan army, which is made up of men, there have been desertions. For that matter, the Americans had their agents in that army, and some of them may be there still. The Afghans have a lot of work cut out for them in getting their army into shape. But they will manage. We hope that Afghanistan, thanks partly to our help and our advice, will soon have an army capable of defending its own borders by itself. When that day comes, there will be no need for Soviet troops in Kabul.

Question: That is both a hope and an assumption. But what if things should go differently?

Answer: There is a lot of talk about America's supplying arms to Pakistan. There have even been references to the atom bomb. Against whom would Pakistan use weapons like those? There's more to it, though. If the government of Afghanistan succeeds in controlling the border, well and good. But if the United States and China continue to arm the Afghan gangs and Pakistan as well, or should they intervene with expeditionary forces as aggressors against Afghanistan, there will be retaliatory response from the Soviet side. Then the situation will really be aggravated, and may lead us to consequences difficult to predict as of today.

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BOOK EXCERPTS: TANK TROOPS' EMPLOYMENT IN WORLD WAR II

Moscow STROITEL'STVO I BOYEVOYE PRIMENENIYE SOVETSKIKH TANKOVYKH VOYSK V GODY VELIKOY OTECHESTVENNOY VOYNY in Russian 1979 signed to press 18 Oct 79 pp 1-7, 40-44, 77-79, 95-96, 111-113, 148-151, 183-184, 204-206, 245-247, 274-276, 305-307, 334-415

[Excerpts from book by group of authors edited by Maj Armd Trps O. A. Losik, professor, "Stroitel'stvo i boyevoye primeneniye sovetskikh tankovykh voysk v gody velikoy otechestvennoy voyny" (Organizational Development and Combat Employment of Soviet Tank Troops in the Great Patriotic War), Voenizdat, Moscow, 1979, 15,000 copies, 415 pages]

[Excerpts] The authors: Maj Gen Tank Trps I. Ye. Krupchenko, Doctor of Historical Sciences, Professor, Honored Worker of Science of RSFSR--director of the group of authors (Introduction, chapters 4 and 5, Conclusion); Engr-Maj Gen (Res) L. V. Sergeyev, Doctor of Technical Sciences, Professor (part of Chapter 1); Col N. A. Kireyev, Candidate of Military Sciences, Docent (chapters 2 and 8); Col M. P. Dorofeyev, Candidate of Military Sciences, Docent (Chapter 3); Col A. P. Antonov, Candidate of Military Sciences (Chapter 6); Col N. G. Andronikov, Candidate of Military Sciences, Docent (part of Chapter 7); Col I. M. Kravchenko, Candidate of Military Sciences, Docent (part of Chapter 7); Col S. V. Kolokol'tsev, Candidate of Military Sciences, Docent (part of Chapter 9, appendices 1 and 2); Col (Ret) V. S. Novikov, Candidate of Military Sciences, Docent (part of Chapter 9); Col B. P. Lebedenko, Candidate of Military Sciences (Chapter 10); Col A. A. Belousov (part of Chapter 11); Engr-Col (Ret) A. P. Pervushin, Doctor of Military Sciences, Professor (part of Chapter 11); Capt 1st Rank (Ret) Z. V. Grebel'skiy, Candidate of Historical Sciences, Docent (part of Chapter 12); Col (Ret) Ya. V. Kuznetsov, Candidate of Historical Sciences, Docent (part of Chapter 12); Engr-Col V. I. Medvedkov, Doctor of Technical Sciences, Professor (part of Chapter 1).

The book is intended for the reading masses. It tells of the organizational development and combat employment of Soviet tank troops in the Great Patriotic War, analyzes methods of conducting combat operations, and examines problems of employing tank combined units and formations in different kinds of warfare.

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Introduction

Tanks have been placed on pedestals as eternal monuments to the unparalleled courage and heroism of Soviet tankmen in Podmoskov'ye, Volgograd, Kalach, Belgorod, Kursk, Kiev, Minsk, Warsaw, Berlin and Prague, in the Mongolian steppe and the mountains of Manchuria, and on squares and streets of many other Soviet and foreign cities.

There is probably not a single major city liberated by Soviet troops located in the former theater of military operations, the name of which is not written on the colors of some tank regiment, brigade or corps.

Soviet tankmen won immortal fame by their unparalleled courage and mass heroism. Our people and the peoples of fraternal socialist countries have immeasurable gratitude for them. It is this gratitude that is reflected in the annual celebration of Tankmen's Day, established in 1945 in recognition of the outstanding services of tank troops¹ in the Great Patriotic War and the achievements of tank builders in outfitting the Soviet Armed Forces with armored equipment.

The tank troops are a component of the Soviet Army, formed by the Communist Party for defending the achievements of the Great October Socialist Revolution.

The Communist Party and V. I. Lenin personally attached enormous importance to technical outfitting of the Soviet Armed Forces, and they defined the role and place of tank troops within them. Analyzing conditions for waging contemporary warfare, Lenin concluded that it was impossible to win victory without equipment and without the ability to employ it in fighting an enemy. He pointed out that in war "the one who wins is the one who has the greatest amount of equipment, efficiency, discipline, and the best vehicles..."²

Lenin's thesis on the role and importance of technical equipment for reinforcing the Army's combat might was the basis of activity by the party and government in technical outfitting of the Armed Forces of the Soviet state, including the basis for creating and developing the tank troops.

1. The official designation of this combat arm has changed several times in the Soviet Army. When it originated, they were called "armored forces"; in the 1930's the designation of tank troops changed four times--"mechanized," "motor-mechanized," "tank" and "armored" troops. In the Great Patriotic War (from late 1942) they were called "armored and mechanized troops." This title was retained until 1955. The term "armored troops" existed from 1955 through 1958. The present designation of "tank troops" was defined by 1959 regulations. For the readers' convenience, the modern designation of this combat arm--"tank troops"--is used everywhere in the book.
2. Lenin, V. I. "Polnoye sobraniye sochineniy" [Complete Collected Works], XXXVI, 116.

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Soviet tank troops covered a long and glorious path in a comparatively brief period of history. They grew from small-sized armored detachments of the Civil War period into a powerful, independent combat arm, which during the Great Patriotic War became the chief striking force of our ground forces.

There was not a single major battle in the last war in which tanks did not take part. Their mass employment in close coordination with other combat arms and aviation determined the exceptionally high dynamic nature of combat operations and gave Great Patriotic War operations a maneuverable character and great spatial scope.

Soviet tankmen honorably performed their sacred duty to the Motherland in the Great Patriotic War. There were 250,000 tankmen awarded orders and medals for courage and valor, over 1,150 tankmen were given the title Hero of the Soviet Union, and 16 of them received this title twice. Considering the great role played by tanks in the war, the party always showed constant concern for their development and improvement. That was the case in the first years of Soviet power and prior to World War II, and that was the case during the war years.

The Communist Party and Soviet government pay great attention to the development of tank troops under present-day conditions as well, proceeding from the assumption that even in a nuclear missile war the ground forces will play a large part. Together with motorized rifle troops, the tank troops comprise the basis of ground forces today.

Thanks to their high resistance to nuclear strikes, tank troops are adapted to the greatest extent to conducting highly maneuverable and daring actions under these conditions. In this regard the tanks not only are not aging weapons, but they are even the most promising weapons of the ground forces. The experience of recent local wars indicates that tanks continue to play an important role on the battlefield under conditions of combat operations by conventional weapons as well.

In evaluating the past of tanks and considering the changes which have occurred in military affairs in the postwar period, it can be boldly said that there will be a further increase in the role of tanks as weapons and of tank troops as a combat arm.

The fact that it is tanks that permit, on the one hand, exploitation of results of nuclear missile strikes against the enemy in the shortest time periods and to the fullest extent and, on the other hand, that substantially reduce friendly losses against such enemy attacks, gives the right to examine them as the basis of contemporary ground forces and as one of the most important means for waging land warfare.

It is as a result of the increase in the tanks' role in modern warfare that they have been given great attention in the pages of the Soviet and

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foreign press in recent years. Almost all authors recognize and consider completely natural the fact that the tank is becoming the most important means for conducting combat operations.

The problem of organizational development of tank troops is linked directly with principles of their battle and operational employment, since it is generally known that the forms of troop organization are directly dependent on the methods of conducting combat operations.

It becomes fully apparent in this regard that a correct, scientifically grounded solution to problems of further development of tank troops will have a determining influence on the resolution of problems of organizing and conducting a contemporary engagement and operation.

The imaginative use of conclusions from past experience can be of great help in solving problems of the combat employment and organizational development of the tank troops, since this will permit a deeper perception of processes occurring in present-day military affairs and a clearer understanding of the inevitability of changes in the theory and practice of conducting combat operations and in the organizational development of armed forces.

The combat experience gained by the Soviet Armed Forces in such a difficult and lengthy war as the Great Patriotic War represents our invaluable property and one of the important sources of further development of Soviet military science.

Based on what has been said, the authors attempted to study and generalize the experience of organizational development and combat employment of Soviet tank troops in the past war and thus help officers and generals of the ground forces take advantage of conclusions from this experience in the practice of troop combat and political training.

The chief content of this work is a demonstration of the CPSU's guiding role in developing the Soviet tank troops as well as an analysis of their organizational development and the practice of their combat employment during the Great Patriotic War.

An appendix to the book provides appropriate reference data on tank troops of Germany, the United States and England during World War II for a comparative analysis of the combat features of equipment and organizational forms and methods of combat employment of Soviet and foreign tank troops.

Party and government decisions on military matters, archive documents, official manuals, published military-theoretical and military-historical works, as well as memoirs of Soviet military leaders and veterans of the tank troops are the basis used in writing this monograph.

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Chapter 1. Development of Armored Equipment

Thus by the beginning of the Great Patriotic War, new models of tanks--the heavy KV [type of heavy tank], the medium T-34 and the light (amphibious) T-40--already had been completed and placed in production in the Soviet Union. Only the production of the light T-50 tank had not been adjusted. In the opinion of some military leaders, it was to become the primary tank for the Soviet Army.

Unparalleled in scope and ferocity, the war required the organization of mass production of armored equipment. This became one of the primary tasks in realigning the Soviet Union's industry to provide the troops with combat equipment. Failures of the first period of the war led to the need to evacuate tank-manufacturing plants into the depths of the country in late summer and early fall of 1941. This complicated even more the supply of armored equipment to the Army.

The country's industrialization carried out during the prewar five-year plans in combination with the mass labor heroism of the Soviet citizens, inspired and led by the Communist Party, permitted evacuating the populace and industrial enterprises to the eastern part of the country under very serious conditions of military operations and creating a high-capacity production facility for the manufacture of armored equipment in the shortest periods of time.

The T-34 tank was the basic tank throughout the war. Its combination of high combat qualities, simplicity of design, and adaptation for repair and reconstruction under field conditions contributed to this.

The heavy KV and IS [Joseph Stalin] heavy tanks were a successful supplement to the medium tanks as a means of qualitative reinforcement of the "firepower-armor protection" complex.

Despite the fact that light tank production was stopped in 1943, they played their part in the first 1½ years of the war, when the production of medium and heavy tanks was not yet developed in the requisite numbers.

Self-propelled artillery mounts (SAU) received extensive development in the latter half of the war. The Soviet SAU's of this time essentially were turretless tanks created on the basis of light, medium and heavy tanks. This permitted developing vehicles in short periods of time which had more powerful weapons in comparison with the tanks on which they were based. Production of SAU in the final two years of the war made up a considerable percentage of the total production of tanks and SAU.

The development of all types of tanks and SAU in the war years is characterized by a consistent reinforcement of their firepower and armor protection. Firepower primarily was increased by increasing the caliber of main guns and the initial velocities of the projectiles. The latter increased primarily through an increase in the charge weight and maximum pressure of

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powder gases in the tube. Armor-piercing shells with tracer and HE fragmentation shells were the primary types of projectiles for the tank and SAU main guns. Subcaliber armor-piercing shells with tracer were developed during the war to increase armor-piercing action, first for the 45-mm gun (accepted in the inventory on 1 April 1942), then for the 57-mm and 76-mm guns (accepted into the inventory in April-May 1943) and finally for the 85-mm guns (at the war's end).

The reinforcement of armor protection followed the line of allocating armor thicknesses in conformity with the probability of the vehicle's destruction on the battlefield, the use of high tilt angles of armor parts, and improvement in the shape of hulls and turrets.

V-2 type diesel engines were installed in all medium and heavy tanks and SAU in the war years. They provided for small fuel expenditures and thus increased ranges of the vehicles on one fueling.

The use of wide tracks resulted in small unit pressures on the ground and thus good trafficability on soils with poor cohesive properties.

All tanks and SAU (and not just command vehicles, as was the case before the war) were equipped with radios and tank intercom systems (TPU).

One of the most important merits of Soviet tanks and SAU was the fact that their design met requirements of large-series production and allowed repair and reconstruction under field conditions. Troop repair facilities repaired and reconstructed over 400,000 armored objects during the war.

The technology of producing armored equipment improved continuously during the war. Its purpose was both to increase output and increase the reliability of tank and SAU components and mechanisms.

Tank, engine building and armored body plants made extensive use of flow line methods of production and conveyor-line assembly of fighting vehicles. This allowed the Soviet tank industry to produce more than 104,000 tanks and SAU during the war.

With the beginning of the war, production capacities of the Soviet automobile industry were switched over considerably to the production of various weapons, including artillery weapons, small arms and light tanks. The production of the BA-10 and BA-20 armored vehicles soon was stopped because of their low combat effectiveness.

The BA-64 light armored vehicle, which later underwent a number of modifications, was developed on the base of the light command vehicle and accepted into the inventory in 1942.

During the Great Patriotic War the Soviet Army encountered the armored equipment of the fascist Germany Army--the most sophisticated equipment in

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comparison with similar equipment of armies of all other capitalist countries. The war demonstrated the superiority of the basic models of Soviet armored equipment over foreign models. The fighting features of the Soviet T-34, KV and IS tanks were the standard which both the Allies in the anti-Hitler coalition and our enemies strove to equal.

Chapter 2. Organizational Development of Tank Troops

An analysis of the organizational development of our Army's tank troops in the past war permits the conclusion as to the repeated and fundamental reorganization of this combat arm. A typical feature of this process was the fact that tank troops organizationally consisted of separate tank units and combined units intended for joint operations with the infantry, but not included organizationally in the T/O&E's of combined rifle units. In addition, major tank (mechanized) combined units and tank formations were formed as part of the tank troops with the primary purpose of developing tactical success into operational success on the offensive, and delivering powerful counterblows against a wedged-in enemy on the defense.

A number of basic trends can be traced clearly in all phases of the organizational development of the tank troops: a continuous increase in the firepower and shock force of units, combined units and formations; the provision of necessary autonomy, especially to corps and armies, in conducting combat operations in isolation from combined rifle units; a constant attempt to provide high mobility to all organizational forms; the provision of capabilities for units, combined units and formations to conduct a successful engagement or operation under varying terrain conditions; and the creation of an easily controllable organization of regiments, brigades, corps and armies.

It should be noted on the whole that the organizational structure of tank troops in the war years fully conformed to the methods of conducting combat operations and to a significant extent contributed to achieving high combat effectiveness of this combat arm.

Chapter 3. Training Personnel for the Tank Troops

The system of personnel training which developed during the Great Patriotic War fully supplied the needs of the front for manning our units and combined units of the tank troops with highly qualified officers and junior tank specialists.

A continuous improvement in the training process, an imaginative approach to the methodology of training cadets and students, rejection of stereotypes in class formats, a persistent struggle for high quality in fulfilling curricula and effective use of training time--all this was typical of the work style of managers and instructors of military educational institutions, commanders, staffs and political workers of training units and combined units during the Great Patriotic War.

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Chapter 4. Employment of Separate Tank Units and Combined Units for Direct Support of Infantry in the Attack

Combat practice thus confirmed the fundamental correctness of our prewar views on the employment of tanks in the offensive. It is generally known that the basis of these views was the recognition that the ground forces must have not only major combined tank units intended for independent actions in the operational depth, but also tank units and subunits for direct support of infantry in penetrating a deliberate defense.

Separate tank (self-propelled artillery) brigades and regiments were employed in Great Patriotic War operations for direct support to combat actions by rifle units and combined units, particularly in penetrating deliberate enemy defenses. The basic mission of tanks and SAU operating jointly with the infantry consisted of destroying enemy personnel and weapons.

War required a decisive massing of NPP [infantry direct support] tanks on axes of main attack, the successive increase in density of tanks and SAU in breakthrough sectors, the inclusion not only of various types of tanks but also of SAU in the NPP groups, and the assurance of close coordination of the tanks with all personnel and weapons participating in an engagement, especially with infantry and artillery.

The average norm of saturation of combined-arms armies with tanks and self-propelled artillery mounts was 80-110 for offensive operations of 1942-1943, 160-170 for operations of 1944, and 210-230 for operations in the final year of the war.

The density of tanks and SAU for direct support of infantry in breakthrough sectors of rifle divisions in 1942-1943 was 10-15 per kilometer of front, it was 20-25 in 1944 and in 1945 it was 30-40. The density of tanks and SAU reached over 50-60 per kilometer of a division breakthrough sector in some rifle divisions advancing on axes of main attack of rifle corps in the 1st Belorussian Front in the Berlin Operation.

War experience showed that as a rule, the density of NPP tanks and SAU within the range of 30-40 units proved insufficient for penetration of a deeply echeloned defense of fascist German forces at high tempos. By virtue of this it became necessary to bring in some of the tanks from mobile army and front groups to complete the breakthrough of the enemy's tactical defenses. That was the case in a majority of operations.

Chapter 5. Employment of Separate Tank (Mechanized) Corps and Tank Armies for Exploiting Success in Offensive Operations

During the Great Patriotic War our tank troops were widely employed in different kinds of offensive actions by Soviet forces. Being the chief shock and maneuver force of the ground forces, they made a worthy contribution to achieving the primary goals of the most important offensive operations.

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War practice confirmed the most important provisions of Soviet military theory on the role, place and missions of tank troops. Soviet tank troops were employed in offensive operations of the Great Patriotic War for accomplishing two specific operational-tactical missions--direct support of infantry and exploitation of success of large combined-arms units.

Separate tank (self-propelled artillery) brigades and regiments were employed for accomplishing the first mission, and tank armies and separate tank (mechanized) corps were used for the second.

Being a resource of the Headquarters of the VSK [Supreme High Command] [Hq, SHC], tank armies were attached to fronts for the period of an operation and tank or mechanized corps were attached to combined-arms armies. In the operational alignments of combined-arms armies and fronts, the tank corps and armies made up echelons for exploitation of success, which in the past war often were termed mobile groups.

The actions of tank armies and separate tank or mechanized corps in offensive operations of the Great Patriotic War usually were distinguished by decisiveness, activeness, dynamic nature, maneuverability, great scope and swiftness.

Table 13 provides a general idea of the scope of operations by tank armies from the experience of a number of front offensive operations in the Great Patriotic War.

Tank armies and corps usually conducted combat operations day and night to the entire depth of front or army operations, usually with a considerable separation from the large combined-arms units.

After commitment to the battle or breakthrough, tank armies or corps would conduct diverse combat actions independently or in coordination with adjacent large mobile or combined-arms units and with aviation. The most frequent actions were: pursuit of a retreating enemy, conduct of meeting engagements and battles, the repulse of enemy counterattacks and counterblows, penetration of hasty defenses, and assault crossing of water obstacles. Individual chapters are devoted to an examination of these matters, considering the importance of the experience of such actions as conducting meeting engagements and the assault crossing of water obstacles.

In all instances, the success of combat actions by tank combined units and formations was assured by thorough organization and preparation of operations, by a high level of combat expertise of the personnel of tank units and combined units, by constant coordination, by comprehensive combat and logistical support, by firm and reliable control, and by the high offensive enthusiasm of all personnel.

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Table 13 - Tank Armies in Selected Front Offensive Operations

1	2	3	4	5	6	7
Belgorod-Khar'kov of Voronezh Front, August 1943	1st	10-20	150	6	30	40
Voronezh Front Operation to liberate Left-Bank Ukraine, September 1943	3d Gds	70	200	3	75	70
Uman'-Botosani of 2d Ukrainian Front, March 1944	6th	15-30	300	14	40	30
	2d	15-20	250	13	55	30
	5th Gds	15-30	300	15	40	30
L'vov-Sandomierz of 1st Ukrainian Front, July-August 1944	1st Gds	20-35	400	15	60	40
	3d Gds	30-40	350	15	60	60
	4th	20-40	350	13	55	55
Lublin-Brest of 1st Belorussian Front, July-August 1944	2d Gds	20-25	300	10	60	40
Jassy-Kishinev of 2d Ukrainian Front, August 1944	6th	20-35	300	10	65	70
Warsaw-Poznan of 1st Belorussian Front, January 1945	2d Gds	25-40	700	17	85	90
	1st Gds	20-40	600	17	75	80
Sandomierz-Silesian of 1st Ukrainian Front, January 1945	4th	18-35	400	13	60	60
	3d Gds	20-40	480	17	55	60
East Prussian of 2d Belorussian Front, January 1945	5th Gds	20-40	250	12	50	30
East Pomeranian of 1st Belorussian Front, February-March 1945	2d Gds	15-20	140	6	40	60
Hingan-Mukden of Transbaikal Front, August 1945	6th Gds	100	820	10	150	Over 100

- KEY:
1. Operation and date
 2. Numerical designations of tank armies
 3. Width of zone of advance (km)
 4. Overall depth of advance of tank army (km)
 5. Period of continuous offensive actions (days)
 6. Maximum rates of advance (km per day)
 7. Maximum separation of tank army from large combined-arms units (km)

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Chapter 6. Meeting Engagements and Battles of Tank (Mechanized) Corps and Tank Armies

The successful conduct of a large number of meeting engagements and battles by Soviet tank and mechanized corps and tank armies in the Great Patriotic War thus was a natural result of the increased combat might of the Soviet Armed Forces, development of Soviet military art and its superiority over the enemy's military art, and an increase in the organizational abilities of commanders and the combat expertise of Soviet tankmen.

Chapter 7. Assault Crossing of Water Obstacles by Combined Units and Formations of Tank Troops

The combat experience of the Great Patriotic War showed that rivers, particularly broad rivers, are serious obstacles in the path of attacking troops. By hindering the crossing of heavy equipment and weapons, they allowed the enemy to use insignificant forces to take up a sturdy defense and they limited the attacker's maneuver. The struggle on river obstacles was of a lengthy and fierce nature.

Despite all difficulties, Soviet armored and mechanized troops coped successfully with the tasks of assault crossing of numerous river lines lying in the path of their victorious advance in the last war. This ensured the development of offensive operations to a great depth and at high tempos.

War experience indicates that the success of river assault crossings depends primarily on their careful organization, the training level of troops, commanders and staffs, availability of crossing forces and resources, their capable employment, and the application of the best methods of troop actions and their control.

The past war's combat experience demonstrated the relationship of tempos of river assault crossings by combined units of tank troops to the quantity and quality of crossing equipment organic to them. During the Patriotic War only tank armies had ponton bridge crossing equipment, and that was in insufficient numbers. Moreover, their transportation on vehicles led in many instances to falling behind, which meant a delay in crossing heavy combat equipment. Therefore the combined units of armored and mechanized troops had to cross rivers either by fording, over the bottom and on equipment at hand under favorable conditions, or cross very late because the ponton bridge sets had lagged behind. This all had a negative effect on timely accomplishment of assigned missions.

The past war's combat practice insistently required the presence of amphibious tanks and APC's and the support of tank combined units with self-propelled crossing equipment having mobility and crosscountry capability no worse than that of the tanks. Their presence would have

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permitted the simultaneous crossing of motorized infantry, tanks and artillery and an assault crossing of the river without reducing the overall rates of advance. The crossing of large river obstacles at such tempos in concluding an operation permitted the creation of vast bridgeheads in short periods of time and thus assured the conduct of a number of successive offensive operations to a great depth without pauses, which is one of the most important requirements of Soviet military art.

The imaginative assimilation of experience gained in the past war's operations in the assault crossing of water obstacles and its capable interpretation in present-day operations is a firm basis for further improvement in the combat expertise of tank troops.

Chapter 8. Employment of Tank (Mechanized) Units, Combined Units and Formations on the Defense

During the Great Patriotic War, units, combined units and formations of the tank troops received abundant experience in organizing and conducting defensive actions. Combat practice indicated that although tank troops are intended as an offensive combat arm, they also played a large part in the defense. Tank units and combined units gave the defense a stable character and were a unique, powerful armored shield of the Soviet troops. At the same time, with the appearance of tanks and mechanized corps and armies in our Armed Forces, there was a sharp increase in the activeness of the defense as a whole. As a result, serious losses were inflicted on the enemy and favorable conditions created for Soviet forces to assume a decisive counteroffensive.

An analysis of the defensive actions of tank units, combined units and formations shows that a shift to the defense was carried out under the most varied conditions. During the war years there was a simultaneous, continuous improvement in methods of organizing defensive actions both under conditions of a forced defense and when shifting to this form of actions deliberately.

The experience of organizing and conducting a defense by tank combined units and formations in the final stages of offensive operations while greatly separated from the combined rifle units is typical. This experience also can be used under present-day conditions.

Chapter 9. The March of Tank Units and Combined Units

Great Patriotic War experience convincingly attests to a continuous increase in the role of movements, and marches above all, in the combat activities of the tank troops. The maneuverable and dynamic character of offensive and defensive operations required a repeated change in the grouping of personnel and weapons and a shift in the axis of main attack (concentration of primary efforts), which was impossible to accomplish without troop movement, and the movement of tank armies and tank and

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mechanized corps above all. Marches were an objective necessity, an organic part of the combat activities of tank troops. Over 50 percent of the time of active operations by tank and mechanized corps during the Great Patriotic War went for making marches. At the same time, it should be emphasized that marches were not a goal in themselves for the tank troops. They were a means and method for attaining specific tactical, operational or strategic goals. Timely and secret accomplishment of marches largely predetermined successful accomplishment of subsequent combat missions by the troops who made the march.

Tank armies and tank and mechanized corps possessed high march capabilities. In the overwhelming majority of cases, their movement exceeded 80-100 km per day.

The marches of tank armies and of tank and mechanized corps usually were accomplished under difficult conditions of the operational-tactical situation in anticipation of a probable encounter with the ground enemy and under pressure from him from the air. They often took place also under difficult physical-geographic conditions of the terrain and bad hydro-meteorological conditions.

It must be emphasized that the tank troops always were in constant readiness for an immediate march under all conditions of the situation with the least expenditure of time for march preparation and for accomplishing organizational measures. In the last war the staffs of combined tank units and formations acquired very abundant experience in preparing for a march in a limited time.

Chapter 10. Control of Units, Combined Units and Formations of Tank Troops

During the war years the improvement in control entities in tank troops and the level of their activities depended on a large number of factors, with the primary ones being a constant development in the structure of control entities, the degree of outfitting of control entities with various communications facilities, the experience of commanders and staffs in command and control, and others.

The experience of controlling tank troops while conducting varied combat operations demonstrated the special importance of preserving continuity of control under all conditions. Only with continuous control was it possible to achieve high effectiveness in the operations of tank troops. This was manifested most fully in the rapid maneuver of personnel and weapons on the battlefield.

Stability of control of tank troops was achieved through echelonment of control posts and by reliable operation of the communications system. An important factor in improving command and control was a constant study and generalization of combat experience and the development of specific control methods on this basis inherent to combat operations of tank troops, with all the diversity of conditions in a situation.

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Chapter 11. Technical Support of Tank Troops in the Battle and Operation

Thus an analysis of the organization and accomplishment of technical support in units, combined units, formations and the tank troops as a whole in the Great Patriotic War demonstrated that the problem of restoring large numbers of disabled armor equipment in short periods of time was accomplished along the following lines:

--Simultaneous repair of all damaged equipment to the extent of current and medium repair and major overhaul of some vehicles directly among the troops, in the armies and in the fronts;

--Performing the recovery and repair of armored equipment with the least amount of work to be done first of all for the purpose of its rapid restoration and return to troop units;

--Moving up the greater portion of repair and recovery facilities to the troops for performing repair on equipment directly where it was disabled or in the nearest shelters;

--Echelonment of repair and recovery facilities to the entire depth of operations by troops of fronts and armies, by accomplishing their timely maneuver and by precise organization of their work;

--By concentrating the primary efforts of repair and recovery facilities on the main axes of troop operations with their centralized employment;

--Specialization of repair facilities by kinds of repair and kinds of equipment.

The provisions developed in prewar years on the organization and accomplishment of technical support to tank troops and on the role and importance of timely technical servicing, repair and recovery of vehicles for maintaining high troop combat readiness were given a serious test during the Great Patriotic War. The war graphically showed that it is impossible to restore large numbers of disabled armored equipment directly on the battlefield for the purpose of its rapid return to formation without an abrupt increase in the number of mobile repair and recovery facilities among the troops, outfitting them with high-capacity equipment, and developing methods allowing the most effective use of their production capabilities (specialization of repair facilities, their echelonment, centralization of the highest echelons).

With the employment of large masses of tanks and SAU on the battlefields in the past war and with considerable numbers of them disabled, the rapid repair of damaged vehicles not only acquired great military-economic significance, it also represented a factor of operational significance with a direct effect on troop combat effectiveness.

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And so, along with an increase in fixed repair facilities during the war and the use of industrial plants to repair tanks, high-capacity mobile repair units and subunits were formed in combined units, armies and fronts. By war's end the mobile repair facilities were credited with over 90 percent of all repairs performed on armored equipment.

Consequently the mobile repair facilities performed 94 percent of all tank repairs under field conditions during the war years, including 86 percent of all current and medium repairs, 37 percent of major overhauls on tanks and SAU, and 75 percent of major engine overhauls.

The creation of PTRZ [mobile tank repair shops] and PTARZ [mobile repair shops for tank components] in fronts permitted bringing the performance of major overhauls of armored equipment closer to the troops in the field and extensively introducing the most productive component method of repair.

War experience showed that the echelonment of all levels of repair and recovery facilities, their capable employment, and maximum proximity to troops in the field permitted a considerable increase in the effectiveness of their work and restoration of a large amount of disabled armored equipment.

More than 400,000 repairs on tanks and SAU and some two million repairs on vehicles were performed during the war years.

During the war major overhauls were performed on 33,855 tank engines and 34,721 other components; over 80,000 tons of serviceable parts, assemblies and components were removed from tanks and SAU (not to be repaired) and 177.5 million rubles (in handbook prices) worth of tank parts were repaired or remade; and more than 1,140 descriptions of tank and SAU parts were assimilated through restoration and manufacturing.¹

The heroic labor of the repair personnel and of those who worked on recovery during the Great Patriotic War was appraised on its merits by the Motherland.

For selfless work of repair and recovery of armored equipment, the following were awarded USSR orders and medals:

--15,777 persons in troop repair subunits and units;

--5,705 persons in recovery subunits and units;

--1,043 persons in armored vehicle repair plants.

1. Cf: ZHURNAL BRONETANKOVYKH I MEKHANIZIROVANNYKH VOYSK [Armored and Mechanized Troop Journal], No 10-11, 1945, p 36.

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The following were awarded orders: Order of Lenin--one BTRZ [armored vehicle repair plant]; Order of Labor Red Banner--one BTRZ; Order of Red Star--one BTRZ, three PTARZ, four orvb [separate repair and refitting battalion], one OTRB [separate tank repair battalion], five recovery companies, one ETB [technical maintenance battalion], one recovery detachment, four SPAM [collecting points for damaged motor vehicles], one PTRB [mobile tank repair base] and one BTI [armored equipment] depot.

Chapter 12. Party-Political Work in the Tank Troops

1. Readjustment of Party-Political Work in Connection with the War that had Begun

The factor of morale played an enormous role in winning victory in the Great Patriotic War. For this reason the party Central Committee gave unremitting attention to strengthening ideological indoctrination work in the Army and Navy back in the prewar years.

The first days and weeks of the war demonstrated the Soviet soldiers' supreme dedication to their Motherland, and their courage and selflessness in a struggle against the enemy. But for a number of reasons our Army suffered failure and was forced to withdraw into the depths of the country while conducting heavy defensive battles. This all had a negative effect on the political-moral status of the troops and generated sentiments of uncertainty in their abilities in a certain part of the servicemen.

Moral steadfastness of the troops acquired decisive importance under conditions of the temporary failures and heavy losses, and only by raising it was it possible to compensate for the shortage of combat equipment and weapons and provide for winning time to train reserves.

The make-up of party-political work in the Armed Forces, including in the tank troops, was determined by the combat mission and specific situation at the fronts. It was directed by the party Central Committee through the Main Political Directorate of the Red Army, the military councils of fronts and armies, commanders, political entities and party organizations.

From the first days of the war the party Central Committee took a number of steps based on the situation existing at the fronts, aimed at comprehensive strengthening of the Armed Forces and reinforcing party-political work in them.

To increase party influence among the troops, the party Central Committee decided on 27 and 29 Jun to mobilize party and Komsomol members and send them to the front as political fighters. In the first three months of the war party obkoms and kraykoms sent over 95,000 of the party and Komsomol members best trained in the military sense into the Army in the field and several thousand of them were sent to the tank troops. For example, in September 1941 the 19th Tank Division alone received 520 political

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fighters from the Western Front Military Council. This allowed restoring party and Komsomol organizations in all subunits by the October fighting.

There were 47,000 party, soviet, trade union and Komsomol workers mobilized for reinforcing the ranks of command and political personnel. Many Central Committee members and leaders of republic and local party organizations were sent to perform management work in the Army and Navy.

But the party replacements arriving at the front from local territorial organizations did not fill the losses of party members in battle, and party and Komsomol organizations in companies and batteries often broke up. For example, as early as 3 July 1941 only 2 of the 13 primary party organizations were intact in the 22d Tank Division and not one of the 13 Komsomol organizations had been preserved.¹ Continuous concern had to be shown for their restoration and for the work of acceptance into the ranks of the party and Komsomol. The combat situation created objective conditions for this. Hundreds of thousands of Red Army men and commanders going into battle aspired to join the Communist Party or the Komsomol. This is shown by numerous data. Just in the period from 22 through 24 June 1941, 491 requests were received in the XXII Mechanized Corps for acceptance into the party and 323 for acceptance into the Komsomol; and 500 and 563 respectively were received in the IX Mechanized Corps.²

Such a flow of applications to join the party and Komsomol attested to the high political-moral status of the troops and boundless faith in the party and made it possible to restore party and Komsomol organizations in the course of fighting.

But the existing conditions for acceptance into the party and Komsomol held back a growth in their ranks. By July and August of 1941 many regiments had few party members remaining who had been party members for three years and had the right to give recommendations. For example, only two such party members remained in the 81st Rank Regiment.³ Of the 28 party members in the 35th Motorized Rifle Regiment in June 1941, only 4 had the right to give recommendations for the party. For this reason, only 30 persons were accepted from the 96 who submitted applications for acceptance into the party.

Considering this circumstance and, most important, the fact that the qualities of a Soviet citizen were tested in short periods of time in battle, the party Central Committee responded to requests of many political entities and changed the conditions for acceptance into the party in the Army in the field. In conformity with the VKP(b) [All-Union Communist Party (Bolshevik)] Central Committee Decree dated 19 August 1941, it was

1. TsAMO [Ministry of Defense Central Archives], stack 208, list 132060, file 3, sheet 7.
2. TsAMO, stack 229, list 213, file 26, sheet 126.
3. TsAMO, stack 32, list 22149, file 21, sheet 161.

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authorized to accept into the party soldiers who were especially distinguished in battle on their submission of recommendations by three party members with a one-year party membership who had known the persons being recommended through joint work for even less than a year. On 9 December 1941 the Central Committee adopted a decree which set a three-month term of candidacy. Bureaus of primary party organizations received the right of acceptance into the party, bypassing general meetings of party members.

These decrees created favorable conditions for a growth in party ranks, and political entities and party organizations improved the work of acceptance. The number of party members in units and subunits increased and their influence on personnel grew stronger.

War complicated the work of commanders and radically changed political work in the Army and Navy. A readjustment of party-political work and of the party-political apparatus was required. By Ukase of the Presidium of the USSR Supreme Soviet dated 16 July 1941 entitled "On Reorganization of Organs of Political Propaganda and on Introduction of the Institution of Military Commissars in the Workers' and Peasants' Red Army," commissars were appointed in all regiments, divisions, staffs, military educational institutions and establishments of the Red Army and Navy, and political instructors were appointed in companies and equivalent subunits. Taking account of the special role of tank troops, a decree of the GKO [State Defense Committee] dated 12 August 1941 designated military commissars and not political instructors in all tank companies. Directorates and departments of political propaganda were reorganized into political directorates and departments, which greatly expanded the rights of political entities and increased their role and responsibility for all aspects of troop life and combat activities.

From the first days of the war the Communist Party took important steps to readjust all ideological work. Leninist ideas on defense of the socialist homeland were made its basis. During the Civil War Lenin wrote: "Whether we want it or not, the question is as follows: We are at war and the fate of the Revolution will be decided by the outcome of this war. This has to become the first and last word of our agitation and of all our political, revolutionary and reorganizing work."¹

The important element in ideological work was to instil Soviet patriotism, utter devotion to the cause of socialism and the ideals of Marxism-Leninism, and a readiness to defend the socialist Motherland and the achievements of the Great October at any cost. The party made skillful use of the heroic traditions and best traits of the Russian and other peoples in this work. At the direction of the VKP(b) Central Committee, a series of pamphlets was published on great people of our Motherland, on prominent military leaders and on soldier-heroes of the past; and the orders of

1. V. I. Lenin, "Polnoye sobraniye sochineniy," XXXVII, 15.

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A. Suvurov, M. Kutuzov, A. Nevskiy and B. Khmel'nitskiy were established somewhat later.

The party attached great importance in ideological indoctrination work to the unity of the Army and people. Lenin saw in this unity an inexhaustible source of strength and invincibility of the Soviet military organization. Implementation of the party motto "Everything for the front, everything for victory!", advanced in the first days of the war, became a matter of honor for every Soviet citizen.

The most important direction of party ideological work, especially in the first period of the war, was the exposure of piratic plans of the fascist German Army and the instilling of class hatred for the enemy. The party steadfastly revealed the imperialist essence of the policy and ideology of fascism and exposed the Hitlerites' monstrous crimes on occupied territory. The motto "Death to the German occupiers!" adopted by all the Soviet people signified the merciless annihilation of all fascist invaders who had encroached on the borders of our Motherland with weapons in hand for its enslavement.

The party made capable use of all means and forms of ideological work in an attempt to bring political influence to bear on every soldier at the front and every toiler in the rear. By decree of the VKP(b) Central Committee dated 29 June 1941, the Sovinformbyuro [Soviet Information Bureau] was established for providing prompt information to Soviet citizens about events at the front and in the rear and for exposing enemy propaganda. The Army press network was expanded considerably and the circulation of newspapers and journals increased sharply by decision of the VKP(b) Central Committee.

Visual agitation as well as radio broadcasting and movies saw wide development.

All these activities were mandatory for the tank troops as well. Special attention in the tank troops was given to the selection and indoctrination of cadres. A directive of the Deputy People's Commissar of Defense dated 12 August 1941 and instructions of the Chief of the Main Political Directorate of the Red Army pointed out the need to select servicemen for tank crews who were utterly devoted to the Motherland, the Bolshevik Party and the Soviet government, who were fearless and resolute, who had an iron character, who had willpower and strength, who were capable of performing exploits and self-sacrifice, and people who never would surrender or abandon combat equipment under any circumstances. Special commissions were set up in units for conducting selection for tank crews. The commissions included representatives of the Main Political Directorate and Main Directorate of the Armored Forces. The party-Komsomol make-up of the crews was at least 35-38 percent.

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An increased level of tank production permitted beginning the activation of tank corps and tank armies in the spring of 1942. This in turn led to an improvement in the structure of political entities of the tank troops. There was a significant expansion in the staffs of political departments of brigades, and political departments of corps and tank armies were formed. With the formation of the latter, direction of the party-political apparatus of units and combined units and direction of party and Komsomol organizations became more qualified and efficient.

The establishment of complete one-man management in the Army and Navy in conformity with the Ukase of the Presidium of the USSR Supreme Soviet dated 9 October 1942 played a large part in strengthening party-political work among the troops and in increasing their combat effectiveness.

Lenin saw one-man management as the most advisable and effective method of troop management, considering it one of the most important principles of military organizational development.

Commanders acquired abundant combat experience in stern battle, and they developed in the military and political sense. Political workers also increased their military knowledge. Qualitative changes in the command and political personnel allowed the conversion to complete one-man management. Its introduction elevated the commanders' role in troop management and created more favorable conditions for improving party-political work as well. This occurred first of all because of the inclusion of hundreds of thousands of commanders at all levels in a more active participation in such work; secondly, by having the entire attention of political workers freed from commissar functions concentrated on performing political work; and thirdly, by the increase in effectiveness and concreteness of activities carried out and by their being tied in more closely with troop combat missions.

Many political workers were transferred to positions as commanders. The command personnel of tank troops were augmented by officers having extensive experience in party-political work, which contributed to its significant improvement.

Thorough explanatory work was conducted in all combined units and units of the tank troops about the essence of one-man management, which prepared the personnel for perceiving one-man management as the most advisable method of command and control.

2. Party-Political Work in Defensive Engagements of 1941-1942

With the very first days of the war, the tank troops entered into difficult battles against superior forces of the fascist German troops. Soviet tankmen performed their military duty honorably, countering the enemy onslaught with their valor, courage and steadfastness.

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The central task of ideological work in this period of the war was to explain to all soldiers the situation at hand and the just nature of the war on the part of the Soviet Union, and to instill in all soldiers steadfastness, faith in their own abilities and faith in winning victory over the enemy. Extensive use was made of the press in accomplishing this task, but many newspapers were left without a printing facility during the period of withdrawal. For this reason, in putting in great effort for the timely publication and delivery of newspapers, political entities at the same time made extensive use of the publication of leaflets and various kinds of booklets and bulletins. For example, on the first day of the war the political department of the 37th Tank Division of the Southwest Front issued a leaflet prior to the division's departure for the front, which set forth the announcement of the Soviet government about the attack by Hitler Germany. The leaflet called on the tankmen to display steadfastness, courage and military ability in upcoming battles and to carry out the operation order honorably.¹

During the division's march from Sukhodoly to Ponikla the commanders, political workers, and the party and Komsomol members read the political department's leaflet to the soldiers and explained to them the Soviet people's objectives in the war and the division's combat mission. In fighting against the enemy on 23 June all division personnel displayed high combat activeness, steadfastness and courage.

Verbal agitation and propaganda was underestimated in many units and large units in the first weeks of the war. Many commanders and political workers believed that lectures, discussions and meetings were peacetime forms of work. Meanwhile, experience showed that all forms of verbal agitation and propaganda are applicable and, moreover, that they are extremely necessary in a combat situation as well. There was a particularly great role played by capably arranged agitprop work under conditions of the troop withdrawal, when a very serious situation was taking shape. That was the case at Moscow in the fall of 1941 and at Stalingrad in 1942.

In connection with the threatening situation existing on the approaches to Moscow, the State Defense Committee adopted a decree on 19 October 1941 about the establishment of a state of siege in Moscow and its surrounding areas.

This decree was a document of enormous mobilizing force. It was the basis for all the work of the Moscow party organization and of the command element and political apparatus of fronts on the Western Axis. All party-political work in this period was conducted under the motto: "We will defend our native Moscow!" and "The defeat of fascist German invaders must begin at Moscow!"

1. Cf: "Partiyno-politicheskaya rabota v Sovetskikh Vooruzhennykh Silakh v gody Velikoy Otechestvennoy voyny" [Party-Political Work in the Soviet Armed Forces During the Great Patriotic War], Moscow, 1968, p 23.

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Political entities and party organizations extensively explained the GKO's decree on the establishment of a state of siege in Moscow and the appeal by the Military Council of the Western Front to defenders of the capital.

With respect to the GKO decree and the appeal by the Military Council, party, Komsomol and Red Army meetings were held in many units and subunits. The decisions of these meetings reflected the soldiers' firm confidence in the inevitable defeat of the enemy. For example, a resolution of a party meeting of the 4th Tank Brigade stated: "In carrying out the order of the CIC of the Western Front, we party members will give our all and, if necessary, will die on the battlefield, but we will not let the German fascists through to Moscow."¹

Rallies in which fighting men and commanders made unique appeals-oaths to stand to the death on the lines occupied were widespread in combined units and units in these menacing days for the Motherland.

An oath sworn at the rally of personnel of the 1st Guards Motorized Rifle Division stated: "We swear to our mothers who gave us life. We swear to the people and the party and the Soviet government . . . that so long as our hands hold the rifle, so long as our hearts beat in our chests, we will rout the enemy mercilessly and destroy the fascist wretches to the last breath."² And the soldiers fulfilled their oath honorably. In the vicinity of Naro-Fominsk in the 20th days of October the division blocked the Hitlerites' path to Moscow and firmly held a line on the Nara River until Soviet forces went into a counteroffensive.

A new element in rallies of this period was the presence there in almost every unit of a delegation of the workers of Moscow and Moscow Oblast and of other republics and oblasts of the country. They brought gifts and letters from toilers of the rear to the front, told the soldiers about selfless labor in the rear and called on the capital's defenders to strain every nerve to defeat the enemy. In response, the fighting men and commanders reported on their combat deeds and swore to step up attacks against the enemy.

Such meetings and discussions demonstrated the unity of the Army and people and inspired confidence in the indestructibility of the Soviet order.

Seminars and briefings by lecturers and agitators and a study and dissemination of their experience contributed to an improvement in agitprop work. The seminars were one of the most important forms for training commanders, political workers and agitators in the practice of party-political work in combat.

1. TsAMO, stack 208, list 2433, file 4, sheet 353.
2. "Vekikaya Otechestvennaya voyna Sovetskogo Soyuza. Kratkaya istoriya" [The Great Patriotic War of the Soviet Union: Concise History], Moscow, 1970, p 121.

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The experience of the first months of the war demonstrated that many Soviet soldiers still did not have a complete idea about the enemy's savage nature. This generated a certain complacency and lowered their vigilance and combat activeness.

Proceeding from Lenin's statement that informing the people about the enemy's atrocities had to be regarded as of paramount importance in all agitation and propaganda at the front, the party Central Committee obligated commanders and political entities to reveal more widely the plans of Hitler Germany with respect to the Soviet people and to show more vividly the enemy's atrocities against prisoners of war and Soviet citizens.

To this end the Main Political Propaganda Directorate published the pamphlets entitled "On Atrocities of Fascist Cannibals in Occupied Countries," "Mad Wolves," and others. The press regularly printed articles and essays by A. Tolstoy, M. Sholokhov, A. Tikhonov, I. Erenburg, A. Sobolev and other Soviet writers exposing fascism.

Material published in the press was used in verbal agitation and propaganda. The work of instilling hatred for the Hitlerites in the personnel contributed to an increase in the soldiers' combat activeness. This was reflected in the movement of fascist tank destroyers and, a bit later, in the sniper movement.

After the publication of material of extraordinary state commissions which investigated the atrocities of fascist occupiers on our soil, and especially after the soldiers saw with their own eyes during the offensive the monstrous devastation, pillaging and mass crimes on territories liberated from the enemy (and the tankmen were among the first to observe all this), the work of instilling hatred took on new scope and deeper content. Its effectiveness greatly increased after the personnel were familiarized with specific examples of enemy atrocities against the families and relatives of personnel of a given unit or a given combined unit. A memorandum drawn up during the defense at Kursk by the political department of the 1st Guards Tank Brigade is typical in this regard. It stated that the families of 110 of the brigade's personnel suffered from atrocities by fascist invaders. All members of the families of three soldiers died at the hands of the Hitlerites, 25 soldiers had individual family members brutally killed, 36 soldiers had relatives driven into fascist Germany, and 32 had their homes burned and all belongings stolen. At the end of the memorandum there was an appeal to the soldiers to take revenge for the deaths, tortures and sufferings of Soviet citizens. Hatred for the enemy became the motivation for a sharp increase in the soldiers' combat activeness, persistence, steadfastness, courage and mass heroism.

Political entities attempted to make every fact of heroism known to all soldiers through the press (newspapers, leaflets, operational newssheets), radio and through verbal agitation and to use these examples to indoctrinate personnel in a spirit of dedication to the Motherland, courage and heroism.

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In the difficult defensive battles of 1941-1942, special attention in the work of commanders and political entities was given to strengthening military discipline and efficiency as the basis for increasing troop steadfastness.

An analysis of the status of discipline in the first weeks of the war contributed to the development of specific measures for further reinforcing it. Taking note of the heroism and courage of the overwhelming majority of Army and Navy personnel, their high morale and their dedication to the Motherland, the party and Soviet government sharply condemned instances of cowardice, alarmism and lack of discipline and demanded that commanders and political entities take strict steps against those who violate the oath and display instability in battle, and to reinforce indoctrinational work and strengthen the soldiers' faith in our victory.

In those days these documents were read before a formation of subunit personnel. They were used to hold briefings and discussions, as the basis for the publication of booklets, for appeals to the troops by military councils, and as the basis for conducting party and Komsomol meetings.

It is generally known that the state of military discipline depends to a decisive extent on the authority of officer personnel and their ability to arrange proper relations with subordinates. Meanwhile, as a result of insufficient experience and preparedness of a considerable number of officers, and sometimes as a result of confusion, some commanders and political workers took an incorrect path under the difficult conditions of the combat situation. They would forget Lenin's thesis on the decisive role of persuasion in indoctrinating the masses and often would substitute curses, shouts and threats for indoctrinational work.

A number of documents concerning party-political work stated that the most important task was to rehabilitate indoctrinational work, make extensive use of the method of persuasion, not substitute administration by mere injunction for daily explanatory work, and to chat daily with the Red Army men, explaining to them the need for iron military discipline and honest fulfillment of military duty, the military oath and orders of commanders and superiors.

With the receipt of an order, special sessions of military councils were held in armies, and conferences of officers and separately of the NCO's, and party and Komsomol meetings were held in all units and combined units. The work of carrying out the demands of this order led to a sharp drop in instances of rudeness. The ties between the command personnel and soldiers were reinforced and subordinates' faith in commanders rose.

The underestimation of verbal propaganda and agitation was eradicated in the units. Commanders and political workers of all levels began to give lectures and briefings more often and, of special importance, they began to meet with the fighting men more often and hold individual and group

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discussions with them, brief political information periods, and readings of newspapers and journals. The living word of commanders, political workers and agitators and the individual discussions began to acquire supreme importance. This was extremely necessary especially for the armored troops. In contrast to rifle, artillery and other units, where soldiers operate in large collectives, the tankmen spend the greater part of the time in a combat situation as part of numerically small crews.

All this work contributed to an increase in the soldiers' feeling of personal responsibility for the Motherland's fate and was vividly reflected in an increase in initiative and resourcefulness, in the greater number of instances of mass heroism, in the strengthening of discipline and order, and in the selfless defense of commanders in battle.

The problems of strengthening military discipline and efficiency during the difficult defensive battles and temporary failures became primary. For example, in the summer and fall of 1942 the basis of all party-political and mass agitation work was the demand of the party, Soviet government and entire people: "Not a step backward!" as set forth in the NKO order dated 28 July 1942. The order condemned the inadmissibility [sic] of further retreat and demanded that a resolute struggle be declared against cowards, alarmists and violators of discipline. It called for defending every position and every meter of Soviet soil and safeguarding equipment and weapons persistently and to the last.

By decision of the party Central Committee, many Central Committee members and leading party and soviet workers were sent among the troops for explanatory work. Front political directorates and the political departments of armies and divisions unfolded extensive verbal and printed propaganda and agitation. The chief topics of lectures and briefings were "Not a step backward," "Retreating further means to destroy the Motherland," "Alarmists and cowards open the front for the enemy," "Discipline and steadfastness are a guarantee of victory" and others.

Propaganda work was combined with extensive organizational activities and was aimed at successful accomplishment of operation orders.

In the very first weeks of the war, many political entities and the main mass of political workers of armored troops managed to readjust their work rapidly and became genuine leaders of political work in a combat situation. This had a positive effect on troop discipline and efficiency and contributed to the successful accomplishment of combat missions.

Party organizations played an exceptionally important role in mobilizing personnel for a selfless fight against the enemy. Being constantly among the fighting men, party members would set examples of courage and allegiance to military duty, they would draw the nonparty personnel after them, and would set a personal example of high combat activeness and discipline.

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As a rule, the commanders and political workers of units and subunits would assign party organizers and Komsomol organizers specific tasks in connection with receipt of an operation order, and they in turn would give party and Komsomol members assignments for working with the personnel.

Party and Komsomol meetings would be called as soon as the situation permitted. They would discuss the vanguard role of party and Komsomol members. For example, after his company received a combat mission, party organizer Morozov of the 2d Company, 73d Tank Regiment, 37th Tank Division consulted with the company commander and called a party meeting with the agenda: "The vanguard role of party members in battle." The meeting lasted only a few minutes, but it had a great motivational effect.

The party members chatted with personnel prior to battle and called on them to act boldly and decisively. When the company entered battle, the party organizer and party members showed by their personal example how to fulfill their party and military duty. After each battle the party organizer would discuss upcoming missions with the party members and give out new party assignments.¹

The summarization of battle results, generalization and dissemination of the experience gained and its extensive use in training replacements were an important means for supporting the operation orders of the command element.

Meetings of the combat aktiv were the most widespread form of propaganda of combat experience. Such a meeting was held in late September in the 101st Tank Division, 19th Army, of the Western Front, with 450 persons participating. The division commander, Col G. M. Mikhaylov, gave a briefing on the combined unit's actions during 57 days of fighting. The briefing revealed the combat experience of fighting men, commanders and political workers and demonstrated their fearlessness, courage and military skill. Deficiencies also were noted, especially in control of combat, in carrying out coordination, in using radios, in reconnaissance and so on. Eighteen participants of the conference shared their combat experience and many of them spoke of poor upkeep of combat vehicles and their poor preparation for battle. The conference adopted an appeal to all division personnel, which later was published in the division newspaper. Following the conference, general personnel meetings were held in subunits on a summarization of results of past fighting and on upcoming missions.²

The work of explaining orders of the people's commissar of defense dated 18 and 21 September and 11 November 1941 on redesignating a number of divisions, including the 1st Moscow Motorized Rifle Division and the 4th Tank Brigade as Guards assumed broad scope in all units and combined units. This generated a burning desire in the personnel to earn the

1. TsAMO, stack 229, list 3985, file 1, sheet 53.
2. TsAMO, stack 208, list 2848, file 2, sheet 121.

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honorary title of Guards in upcoming battles. Competition began in the units for receiving a Guards title.

Tanks primarily were used in a dispersed manner--one or two each in ambushes and strongpoints--in the defensive fighting for Stalingrad. This made it necessary to alter the forms and methods of party-political work. Work with crews, groups of fighting men and individual soldiers became the primary form instead of mass political activities.

The concentration of party-political work efforts in small groups of tanks and individual crews was of great importance. The party-political apparatus came closer to the crews and individual fighting men. In performing individual work, the commanders, political workers, and the party and Komsomol aktiv gained a better knowledge of each soldier and of his hopes and needs, and they gained an opportunity for influencing his behavior more actively.

In the difficult fighting of 1941-1942, special significance was acquired not only by the ability of commanders and political workers to direct battle and organize party-political work, but also by their personal boldness and ability to lead soldiers in performing an assigned mission. A majority of commanders and political workers possessed these qualities. They would inspire the fighting men in the most difficult moments of battle and they would be the first to rise into the attack and set the example of valor and heroism.

Under the difficult conditions of the first period of the war, commanders, political workers and party organizations acquired valuable experience in organizing and conducting party-political work under combat conditions, and a majority of them coped successfully with the assigned tasks.

At the same time, the work of some political entities was arranged with insufficient concreteness and purposefulness and it suffered by its isolation from missions being accomplished by the troops.

Improper allocation of workers for the period of a battle was one of the major deficiencies in the organizational activity of such political entities. In an attempt to obtain more complete information on the state of affairs in all units, some chiefs would send political entity workers out to the regiments for extremely short periods of time, merely to collect information. Others, as was the case in the 1st Motorized Rifle Division, assigned department instructors to units and subunits for a lengthy time. Both instances led to a dissipation of the political entities' forces and weakened their organizational role. In the first instance their workers were not able to provide substantial assistance to the units and, in the second, they substituted for the political workers in the outlying areas.

There were cases where political workers were used as rank-and-file soldiers when there was no extreme necessity for this. The political workers suffered heavy losses in the process and were not able to act as the organizers and directors of political work.

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In the first months of the war not all political entities gave necessary assistance to the command element in organizing political support of marches or in mobilizing personnel for the upkeep of weapons and combat equipment.

Insufficient attention was given to party information. Political reports of some unit military commissars and chiefs of political departments of combined units did not provide a detailed analysis of the status of military discipline or sentiments of the personnel, not to mention the effectiveness of various forms and means of party-political work. At times negative facts and sentiments were softened in the political reports, reality was embellished, and instances of a withdrawal of subordinate units from the positions they occupied were concealed. This would discredit superior commanders and political entities and damage the common cause.

Proper attention also was not always given to the timely restoration of party and Komsomol organizations and to assigning party and Komsomol organizers to replace those who were disabled. Files on acceptance into the party and Komsomol were made out slowly and the issue of party documents was slow. Combat experience was studied and disseminated insufficiently and verbal propaganda and agitation was underestimated.

These and some other serious deficiencies in the work of a number of political entities of armored and mechanized troops were explained by the enormous difficulties of the first period of the war and by the absence of experience in organizing and conducting party-political work in a combat situation in a majority of the political workers. A considerable renewal of the cadres of political workers in the prewar years and shortcomings in their allocation also had an effect.

Combat experience and the experience of party-political work was acquired during the war and the effectiveness of this work rose. This contributed to a continuous strengthening of discipline and troop morale and an increase in the combat effectiveness of units and combined units. Favorable conditions for the Soviet forces to go into a decisive counteroffensive had been created by the end of the first period of the war.

3. Party-Political Work during the Offensive by Soviet Forces in 1943-1945

After halting the enemy, the party directed the efforts of the people and Army at his defeat. It organized the victorious offensive by Soviet forces to expel Hitler's occupiers from Soviet soil and perform the great liberation mission with respect to the peoples of Europe and Asia.

As before, the focus of attention by commanders and political entities was the concern for a comprehensive strengthening of party and Komsomol organizations. On 24 May 1943 the VKP(b) Central Committee adopted the

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decree entitled "On Reorganization of the Structure of Party and Komsomol Organizations in the Red Army and on Strengthening the Role of Front, Army and Division Newspapers." The following structure of party organizations (and of Komsomol organizations accordingly) was established: a regimental party bureau in the regiment, a primary party organization in the battalion, and a company party organization in the company. The Central Committee decree was of especially great importance for the tank troops. The experience of the past war years attested convincingly to the fact that the tank company and SAU battery was the center of party-political work in the combined tank unit. Therefore the formation of party organizations in the tank companies played an inestimable role in reinforcing party influence on every crew and on all personnel and in ensuring the accomplishment of combat missions by every subunit.

According to data as of September 1944, the 1st Guards Tank Army had 495 company party organizations and 421 Komsomol organizations. But by the beginning of the Vistula-Oder Operation, there already were 605 party organizations and 540 Komsomol organizations in operation in the subunit. Full-fledged party and Komsomol organizations were set up in all companies, batteries and equivalent subunits (with the exception of two). The platoons and often the crews had party or party-Komsomol groups. Party members were in every crew. The Army began the operation with 8,053 party members, 4,135 party candidate members and 10,032 Komsomol members in its ranks. There had never before been such a large party and Komsomol make-up in the Army.¹

The party and Komsomol organizations of other tank armies were similar in composition.

The creation of party organizations and their restoration after losses was possible thanks to the growth in party ranks and thanks to the work performed by political entities in allocating party members and candidate members arriving as replacements.

The Communist Party's authority rose even more and its ties with the soldier masses grew stronger during the victorious offensive operations. The desire of the better part of the officers, NCO's and privates to become party members became stronger. In fulfilling the instructions of the RKKKA [Workers' and Peasants' Red Army] Main Political Directorate, the political entities and party organizations significantly improved the work of ideological-political indoctrination of young party members. While this task was accomplished chiefly through discussions of the Party Bylaws and current events of domestic and international life under conditions of the 1943 offensive operations, political schools and circles were formed in 1944 in which the young party members would study the Party Bylaws, the "Concise Course of VKP(b) History," and questions of current policy. They were systematically accustomed to party life and to mass political work

1. TsAMO, stack 299, list 20543, file 1, sheet 119.

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among the soldiers. Party organizations would try to ensure that every young party member set the example for the privates in combat.

In allocating party and Komsomol personnel, the political entities and party organizations would attempt to ensure that there were party and Komsomol members in every crew and every team. Party influence was assured in this manner. This task usually was accomplished successfully. For example, by the beginning of the Vistula-Oder Operation there were from two to five party members and candidate members in all crews of the 37th Guards Heavy Self-Propelled Artillery Regiment without exception.¹

The political entities performed much work of preparing and training party workers for practical work. The overwhelming majority of them were young party members. For example, as of January 1944 36 percent of party organizers of primary party organizations in the 1st Tank Army had a term of party membership since 1941. Subunit party organizers with a term of party membership since 1942-1943 comprised 54 percent, and those with party work experience up to 6 months made up 70 percent.² In early 1944 the political department of 1st Tank Army held a ten-day course for party organizers of [line] battalions, artillery battalions and regiments. In addition to general political topics, the seminar discussed questions of party work practice: the party organizer's work before battle, in a combat situation and after battle; the work of the party bureau; preparation and conduct of party meetings; party assignments and supervision over their execution; acceptance into the party and the work with young party members; and party administration. Each month one-day and two-day conference seminars were held in the combined units with the company party organizers. Similar courses and seminars with party organizers of primary party organizations also were held in other tank armies. Conferences on problems of party work practice and an exchange of experience were of great help to party organizers. Political entities devoted much attention to forming a reserve of tank company and SAU battery party organizers.

In conformity with requirements of an RKKA Main Political Directorate directive dated 14 October 1944, day and evening schools for the party aktiv were set up in tank and mechanized combined units. This was a qualitatively new level of training for the party aktiv typical of the period of grandiose offensive operations of 1944-1945.

Commanders, political entities, and party and Komsomol organizations performed extensive ideological-political work among all personnel. The work bore a concrete, goal-oriented character and was conducted with consideration of the situation, the combat mission and categories of service personnel. The content of this work was an explanation of the just goals of the Great Patriotic War and the policy of the Communist Party and Soviet state aimed at liberating our Motherland from the enemy and giving

1. TsAMO, stack 299, list 20543, file 1, sheet 123.
2. TsAMO, stack 30, list 23607, file 2, sheet 21.

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assistance to nations who had fallen under the fascist yoke. Ideological work was aimed at a thorough elucidation of tasks assigned by the party to the Soviet troops, and at maintaining and reinforcing in personnel an offensive enthusiasm and a desire to improve combat training and strengthen discipline. Much attention was given to instilling hatred for the enemy and a desire to defeat him once and for all, to vigilance, and to the fight against conceit and carelessness.

There was systematic work to increase the officers' Marxist-Leninist training, to expand their military-political outlook and to instill in them the skills of indoctrinating subordinates. Special attention was given to training and indoctrinating young officers. The officers increased their political knowledge through independent study of Marxist-Leninist theory, by study in the party educational system, and by participation in theoretical discussions and conferences. Consultations were arranged for officers in combined units and units. Depending on the combat situation, seminars would be held with officers and lectures given on the most important military-political topics. Meetings at which the results of past battles were summarized, combat experience was propagandized and articles in the periodical press were discussed occupied a large part of the work with officers. For example, the lead article of the newspaper KRASNAYA ZVEZDA dated 6 August 1944 entitled "The Political Indoctrination of Officers" was discussed everywhere.

Political classes, group and individual discussions, lectures, briefings, political information sessions, rallies and meetings were held with the privates and NCO's.

It should be noted that political classes with privates and separately with the NCO's in combined units of tank troops assumed a regular character in the winter of 1944-1945. Some 1,000 political study groups were formed in the 2d Guards Tank Army. The most experienced officers, chiefly commanders of battalions, companies and platoons, were assigned to direct them.¹ The personnel would work in these groups twice a week on topics worked out by the Main Political Directorate. In addition, political information sessions were held twice a week.

Subject matter of agitprop activities for privates and NCO's was aimed at a detailed explanation of Leninist ideas on defense of the socialist homeland, propaganda of the Communist Party's organizing and inspiring role and of the heroic work of the Soviet rear, and instilling boundless love for the Motherland, proletarian internationalism and a burning hatred for the enemy. Questions of the liberation mission of our forces, the moral make-up of the Soviet soldier, an increase in vigilance, keeping military secrets, strengthening discipline and efficiency, and improving military expertise occupied a major place in the work with privates and NCO's.

1. TsAMO, stack 307, list 4148, file 410, sheet 205.

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The significant turnover in personnel required stepped-up propaganda of the combat traditions of tank troops. Veterans of tank units and combined units, Heroes of the Soviet Union and order-wearers would speak to the young soldiers, giving recollections of past battles and of the heroic exploits of officers and men. There was much work done to explain the importance of the unit colors. Commanders and political workers saw to it that every young soldier sacredly revered the colors and had a detailed knowledge of all campaigns in which the unit had taken part under this banner. Considerable attention was given to instilling love for the weapon. Political workers and agitators would hold discussions about the heroic labor of workers who manufactured the weapons and the formidable power of these weapons.

The work of instilling hatred for the enemy, which was performed regularly throughout the war, had special features during the period of offensive operations. Tankmen who took part in the liberation of Soviet Union territory saw how their native soil had been mutilated by the fascist invaders. Commanders, political workers, and the party and Komsomol aktiv used this circumstance in indoctrinational work. Meetings between the fighting men and the local populace and discussions about the atrocities of the Hitlerites revealed to soldiers in the liberated cities and villages were of great importance. In early January 1945 meetings were held in all Komsomol organizations of the 1st Guards Tank Army with the agenda: "Why I am taking vengeance on the Hitlerites."¹

When our forces moved onto the territory of Germany, the military councils and political entities of tank armies took steps to ensure that the feeling of hatred for the Hitlerites did not develop in some soldiers into monstrous acts of vengeance toward the German population. The political department of 1st Guards Tank Army published a letter appeal to all fighting men, NCO's and officers for this purpose on 6 February 1945.² Extensive explanatory work was performed around this document in the units and subunits. This contributed to a strengthening of discipline and organization.

When our troops were conducting combat actions beyond the borders of the Soviet Union, it was very important for every fighting man to have a thorough understanding of party policy with respect to the liberated countries and for him to become a conductor of that policy in deed. In connection with this, commanders and political entities stepped up the explanation of the Soviet Army's liberation mission. Political classes, political information sessions, briefings and discussions were about the policy of the Soviet government with respect to countries to which military actions had shifted. Discussions were held about the soldiers' standards of behavior beyond the border of their native country, about the honor and dignity of the Soviet fighting man, and about respect for the sovereignty and national dignity of the peoples being liberated.

1. TsAMO, stack 229, list 24440, file 3, sheet 25.
2. TsAMO, stack 299, list 20543, file 1, sheet 136.

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Commanders and political entities took account of the fact that the everyday life, customs and ideology of capitalist society might have a negative influence on a certain part of our soldiers. Therefore attention was given to propaganda of the Soviet people's successes, a demonstration of the advantages of the socialist system over the capitalist system, and the development of Soviet national and military pride in the soldiers.

Problems of increasing the Soviet soldiers' vigilance arose with special acuteness in connection with the shift in military actions to the territory of bourgeois states. Political departments of tank armies and political entities of combined units continuously directed the attention of commanders, political workers, and party and Komsomol organizations to the need for stepping up this work.

Combat training missions also determined the content of party-political work for supporting this training. Combat training was conducted continuously and was stepped up especially in preparing for the next operation. Party and Komsomol meetings would be held in units and subunits for purposes of mobilizing party and Komsomol members to accomplish combat training missions. Party aktiv meetings would be held in the combined units and tank armies. For example, on the eve of the Berlin Operation in April 1945, party and Komsomol meetings were held in all companies and battalions on the vanguard role of party and Komsomol members in combat training.

The 44th Guards Tank Brigade was scheduled to perform an exercise of firing from the tank. The question of how best to accomplish the mission was discussed at party and Komsomol meetings in the subunits. Party members made the mission known to all crews and explained the nature of the exercise. Operational newssheets were put out in the companies calling on the tankmen for an outstanding performance of the mission. The firing took place in an organized manner and with good results. All party and Komsomol members in the brigade performed the mission with a grade of "outstanding." Ninety percent of the crews had direct hits.

Extensive work was performed in all tank and mechanized combined units around instruction leaflets put out by front political directorates. They included "For the Tank Crew," "For the SAU Crew," "For the Driver-Mechanic," "For the Tank-Mounted Personnel" and others. The experience of heroes was propagandized in a popular and figurative form in them and they set forth the principles of coordination in combat. The work around the instruction leaflets did not let up even during the offensive. Publication and use of the instruction leaflets in the work permitted commanders and political entities to give military propaganda a truly mass, goal-oriented and differentiated character.

During preparation for operations, the military councils of fronts and tank armies would direct special attention of the political entities and party organizations to political support of coordination of the combat arms. Seminars of political workers and conferences of command personnel

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devoted to organizing coordination of the combat arms became an extensive practice. Conferences of commanders and political workers with pilots of combined air units operating in coordination were held from 1 through 15 January 1945 in the 1st Guards Tank Army. Meetings of the tankmen and self-propelled artillery personnel with infantrymen, combat engineers and representatives of other combat arms were held in combined units and units.

Party and Komsomol members of separate brigades, regiments and battalions would hold joint meetings with party and Komsomol members of combined-arms units. One of the new forms of party-political work to support coordination was the conduct of joint party and Komsomol meetings of primary organizations of units and combined units included in forward detachments right at the attack positions.

The continuous increase in the scope, decisiveness and maneuverability of offensive operations and the increase in their tempos and depths placed heightened demands on the condition of armored equipment, on its maintenance and repair, and on the rapid restoration of disabled combat vehicles. Guidance documents demanded an improvement in the maintenance of tanks and SAU, the establishment of rigid, systematic control over its accomplishment, and precise observance of instructions and manuals on caring for armored equipment. Particular attention was given to careful preparation of equipment for making long marches. After some time the Main Political Directorate checked the work of political entities and party organizations of a number of combined units of the armored troops in carrying out these demands.

Extensive work of performing the missions assigned in these documents was carried out in all tank armies and combined units. We will demonstrate this using the 3d Guards Tank Army as an example. Questions of improving the maintenance and upkeep of combat vehicles were discussed widely at party aktiv meetings in the army and combined units and at party and Komsomol meetings in the units and subunits. Speaking at an army party aktiv meeting held on 20 December 1944, Army CIC Gen P. S. Rybalko said: "We must ensure that our tanks enter the lair of the fascist beast and finish him off there. Our vehicles can go to Berlin, but we must overcome all defensive lines and preserve the vehicles. This is no easy matter. To do this, we must identify the best driver-mechanics and teach all the rest from their example."¹

The best driver-mechanics, masters of tank driving, party members Akhapiin, Klimenko, Moskalenko and others told at party meetings in the units and subunits about how they achieved success in bettering the guaranteed service life of the vehicles. Meetings of officers, conferences of technical personnel, commanders of combat vehicles and driver-mechanics, and technical conferences devoted to the struggle for improving maintenance of tanks and SAU were held in the combined units and units.

1. TsAMO, stack 236, list 2675, file 146, sheet 56.

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Discussions were held in subunits and crews entitled "The crews' role in the fight to extend tank life," "The best driver-mechanics and their experience," "Care of equipment under winter conditions" and others.¹

The Army military council and political department generalized the experience of party-political work for the care and maintenance of tank equipment. A special military council directive was issued. Party meetings were conducted in all primary party organizations with the agenda: "On the responsibility of party members in organizing a struggle for best maintenance of tanks and SAU, for accelerating the deadlines for repair and increasing the quality of repair of combat vehicles."² The situation involving the maintenance, care and repair of combat equipment in the armies improved considerably and noncombat losses of vehicles were reduced sharply as a result of all this work.

All the many-sided party-political work performed among the troops was aimed in the final account at accomplishing the chief mission--supporting successful offensive actions by combined units and units. This work acquired an especially intensive, goal-oriented and specific character in the periods immediately preceding a particular operation. It was conducted according to plans drawn up by appropriate political entities and political workers on the basis of instructions of front and Army military councils and combined unit and unit commanders. Party-political work plans were drawn up based on the combat mission, the character and features of upcoming combat actions, and the time given for preparing for operations. They covered activities for the period of preparation of offensive operations and during combat actions with consideration of the most important phases and specific missions (reaching a specific line, assault crossing of water obstacles and so on).

Primary attention in the work of political departments was given to providing commanders and political workers with specific assistance in organizing and conducting political indoctrination work in connection with the upcoming offensive. Operations groups of instructors, lecturers and agitators of political departments were sent out to units and subunits. They helped arrange organizational-party work and ideological work better. Workers of political entities and deputy unit and subunit commanders for political affairs would check the placement of party and Komsomol members and they would brief party organizers, Komsomol organizers, agitators, and operational newssheet editors. They would take a direct part in checking the readiness of a unit or subunit for combat operations.

In preparing for each offensive operation, the command element and political entities would perform extensive, goal-oriented work with command, political and technical cadres and with rear service workers. Various types of courses and seminars were held which summarized results of past

1. TsAMO, stack 236, list 2675, file 146, sheet 84.
2. TsAMO, stack 315, list 4451, file 57, sheets 1-5.

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battles and heard briefings and announcements connected with the upcoming operation, and where announcements on the military-political situation were made.

The basic forms of political work during immediate preparations for offensive operations were as follows: party and Komsomol meetings to mobilize party and Komsomol members and ensure their vanguard role in battle; personnel rallies; publication of operational newssheets; informing the personnel of Sovinformbyuro reports; the work with newspapers and leaflets; the work of subunit agitators; and much more. The primary goal of all these activities was to ensure the moral-political preparation of soldiers for fighting and to create a high offensive enthusiasm.

The importance of continuous, vigorous party-political work rose with the beginning of an offensive operation. The swift advance of tank units with a large number of fast-moving, fierce engagements and continuous change in the combat situation required greater efficiency, flexibility, and independence in work than in past battles for the political apparatus and the party and Komsomol organizations.

For example, the political department of 2d Guards Tank Army was in the Army's first echelon from the first day of the offensive from the Vistula to the Oder. Thanks to this, the political department was informed of events all the while, knew the status of party-political work in attacking units, and took prompt steps to eliminate deficiencies that were revealed. Political workers were in combat formations throughout all the offensive. They had constant contact with the party and Komsomol aktiv, personally conducted political work with the fighting men and taught subunit commanders how to perform this work.

Vehicles of political entities would move behind the brigade combat formations in all combined tank units. Sovinformbyuro reports would be received right here by radio, then duplicated on typewriters and sent out to the subunits. Workers of political departments periodically would gather briefly, exchange information, become familiar with the overall situation in the sector, receive instructions and material for further work and again would set off for the units.

With consideration for the transient nature of the engagements, measures for their political support also were brief and at the same time intelligible and effective. They had to be conducted almost on the move and very briefly in tanks, SAU, vehicles, and wagons, during pauses in the fighting, at short halts and rests and on the march.

During the fighting the efforts of commanders, political workers and the party and Komsomol aktiv were aimed at making the next combat mission known to all personnel, briefing the soldiers promptly on the situation at Patriotic War fronts and on combat successes of their units and neighbors, popularizing persons who distinguished themselves in battle, and disseminating the experience of capable actions by crews and individual fighting men.

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In arranging party-political work in battle, commanders and political workers would rely on party and Komsomol organizations, on their initiative and activeness, and on their leading and inspiring role.

Every offensive operation is full of examples of courage, valor and heroism displayed by tankmen who were party and Komsomol members. This heroism bore a mass character. For example, there were 75 percent party or Komsomol members among the tankmen awarded orders and medals for the fighting at Kursk. Of 405 tankmen of the XVI Tank Corps given governmental awards in this fighting, there were 178 party members and 135 Komsomol members.¹ Of the total number of persons awarded orders and medals for the Vistula-Oder Operation in the 2d Guards Tank Army, 66.8 percent were party or Komsomol members. There were 63 party members and 21 Komsomol members among the 101 soldiers awarded the title of Hero of the Soviet Union.²

The role of every party and Komsomol member in working with the fighting men rose even more under conditions of the swift offensive engagements and marches, when it was difficult for the political entities and political workers to take in all crews with their influence. This work bore the nature of political support to the combat mission of the subunit or crew. Party members constantly would explain to fighting men not only the general objectives of a battle, but also the specific mission for each day. They would be the first to begin performing the most difficult assignments and would boldly assume command when commanders were disabled. In the fighting on the streets of Berlin, Sgt Zernov, a party member and gun commander, replaced a disabled tank commander and entered battle against three counterattacking Tigers. Zernov knocked out two of them. By destroying seven machinegun emplacements and killing ten panzerfaust personnel, he made it possible for our other tanks to move forward.³

Party and Komsomol meetings played a large part in political support to the accomplishment of combat missions. They were held everywhere when the combat mission was received. As a rule, pauses between engagements were used to conduct such meetings during operations. War experience showed that it was not always possible or advisable to call general party meetings of primary organizations. Taking this into account, political entities advanced a new form of contact for party members during offensive engagements--delegate party meetings. Several party members from each company were invited to them. Along with the delegate meetings, company party meetings during engagements became widespread. As a rule, they were brief and to the point. They sometimes were held without minutes and without electing a presidium. Party members would discuss results of the past fighting and questions of the vanguard role of party members in battle. They would exchange combat experience, criticize comrades who

1. TsAMO, stack 203, list 48605, file 1, sheet 16.
2. TsAMO, stack 307, list 4148, file 410, sheets 236, 238.
3. TsAMO, stack 299, list 240134, file 8, sheet 309.

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made mistakes in the performance of the combat mission, receive specific party assignments and again go off to battle.

The role of the company party organization, which carried the main burden of political work in platoons, crews and teams, rose even more under conditions of the swift offensive engagements. For this reason it was a constant concern for political entities to retain full-fledged party organizations during engagements, to replace disabled party organizers or Komsomol organizers, to select and work with deputy party and Komsomol organizers, and to ensure a continuous increase in party ranks by distinguished soldiers.

During the offensive engagements agitprop work, especially full-scale political agitation with its offensive fighting character and varied forms of agitation techniques, made it possible to take in all party men and commanders with continuous political influence and constantly mobilize them for increasing combat activeness and stepping up offensive enthusiasm in every possible way. Brought to the fore were such forms of verbal agitation as individual and group discussions, the reading of the Supreme Commander's orders and Sovinformburo reports, political information sessions, radio broadcasts, and fervent combat appeals of commanders, political workers and agitators prior to attacks. Combat radios were used widely by political workers to announce soldiers' exploits, to call on the soldiers to follow the example of the best crews, and to appeal to them with combat slogans.

Diverse means and forms of printed propaganda and agitation played an important part in assuring continuity of party-political work. Orders and addresses by commanders in chief and military councils written in a clear, laconic language explained to soldiers precisely and clearly the objectives and missions of the offensive and inspired them to accomplish them successfully. Extensive explanatory work around such addresses and orders provided for a close connection of agitation with concrete combat missions and ensured its high effectiveness.

The work of tank army and combined unit newspapers became more complicated under conditions of offensive operations. It was necessary to keep up with events, to cover combat life promptly and clearly, and popularize the combat deeds and experience of the best units, subunits and crews. Throughout the Vistula-Oder Operation the newspaper of the 1st Guards Tank Army, NA RAZGROM VRAGA [For Defeat of the Enemy], was in the immediate vicinity of the army political department. Despite swift daily marches, the newspaper was published without interruption. It promptly printed all orders of the Supreme Commander and other governmental announcements. The pages of the newspaper vividly reflected a feature of the operation--its swiftness. The newspaper devoted many articles to the fight for high rates of advance.

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Leaflets of the most diverse kinds were a prompt and effective form of printed propaganda and agitation. Political departments of tank armies, corps and brigades would publish them by the typographic method. Their content varied: concise presentation of the Supreme Commander's orders; announcements of combat deeds by the most distinguished fighting men and crews and by subunits; and tales of examples of military expertise. Some of the leaflets were devoted to reinforcing vigilance and discipline and to other matters dictated by the very course of battle. With the high rates of advance, the political department leaflets first of all provided prompt material for holding discussions and readings with the fighting men and, secondly, they helped political entities direct explanatory work more flexibly in the units on matters advanced by the rapidly changing combat situation.

Express leaflets, the "pass down the line" leaflet and operational news-sheets were the most massive, flexible and effective form of agitation, especially in popularizing heroic examples. The unquestionable advantage of such leaflets and operational news-sheets over other forms of agitation was that they were written directly on the battlefield and were quickly passed to the crews, teams and squads under all conditions.

Visual means also were widely used. The opportunities for this were somewhat limited when deep raids were made against enemy rear areas. On the other hand, there were sufficient opportunities for unfolding visual agitation in the period of preparation for an operation, in assembly areas, at assembly positions, at the end of battle or on troop movement routes. Topical displays and posters reflecting combat exploits of fighting men and officers were arranged in many units. Slogans and appeals would be posted. Sometimes they would be written directly on the walls of houses. Panels with a description of combat exploits of tankmen and with heroes' photographs would be set up and artistically arranged on troop movement routes over which reserves and replacements passed. Sovinformbyuro reports and other material on the course of the war and successes of Soviet forces would be posted on these same panels or on special panels. Slogans written on tank turrets and the sides of vehicles had a great influence.

Memorandums of thanks from the Supreme Commander would be presented to the fighting men in the final period of the war. This had a great effect. The memorandums would be handed out in front of a subunit formation. By the end of an operation all soldiers frequently would have received several such memorandums. This was an object of pride for the fighting men.

While focusing primary efforts on political indoctrination work in units and subunits directly performing combat missions, the political entities of combined units and the entire party-political apparatus at the same time would try not to lose sight of the service of logistical subunits. Extensive party-political work would be conducted in repair and reconstruction units and in recovery units. It was aimed at ensuring that the

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personnel understood the great importance of most rapid restoration and return to formation of the damaged combat equipment and that they worked to accomplish this mission indefatigably. The best officers and fighting men of these units would be given governmental awards on an equal basis with the heroes of battle. Their experience was widely popularized in tank army and combined unit newspapers and leaflets and posters were devoted to them.

Political workers regularly performed explanatory work among wounded soldiers. They would hold discussions and political information sessions, read newspapers and Sovinformbyuro reports, and tell about the successes of Soviet troops. The wounded soldiers who were distinguished in battle would be presented with governmental awards right there in the hospitals.

During offensive fighting the commanders and political workers would also give constant attention to matters of organizing the burial of soldiers who fell in fighting for the Motherland. Rallies of mourning would be held during the burial of those who died. Commanders and combat friends would swear to take vengeance on the enemy for the death of their comrades. Political workers would ensure that the staffs promptly sent families of the deceased documents for obtaining authorized privileges and benefits. Necessary steps also would be taken to perpetuate the memory of the fallen heroes.

Political workers would show special concern for personnel nourishment and rest. Despite all the difficulties of continuous fighting, the personnel would be provided with hot food on time during an offensive and, in addition, each soldier would be issued supplementary food products. Commanders and political workers would be on duty constantly at the kitchens and mess units. Special warming stations would be set up in winter where it was possible to dry clothing and rest. Sanitary processing of the personnel was performed regularly. Commanders and political workers would show constant concern for prompt evacuation of wounded from the battlefield and for sending them to hospitals.

Problems of conducting vigorous ideological struggle against the enemy aimed at undermining the morale and demoralizing his forces made up a large part of the work of the party-political apparatus of tank troops. The primary forms of special propaganda were the publication and dissemination of printed material in the German and other languages and conducting verbal broadcasts over radios, loudspeaker devices or simply through megaphones. There were specially trained political workers and appropriate facilities in the tank armies to employ means of special propaganda. Simultaneously with this work, political entities and the party-political apparatus would take effective steps to prevent and cut short enemy attempts to conduct subversive, demagogic propaganda among Soviet officers and men. Activities were conducted above all aimed at developing in the personnel a spirit of high political vigilance and constant readiness to offer a decisive rebuff to enemy intrigues. As a result of this work, the

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fighting men and commanders demonstrated proper political maturity during the offensive and they themselves decisively stopped enemy means of propaganda. For example, leaflets, newspapers and postcards dropped by the enemy were immediately gathered up by the personnel and destroyed. Rumor mongers and enemy spies would be detained on the spot and handed over to appropriate agencies.

Tank army military councils, combined unit political departments and the party-political apparatus of units would perform extensive work among the populace of liberated peoples directly during combat operations. They were given assistance in restoring entities of Soviet authority. Steps were taken for logistical support to the residents of villages and cities and for the revival of enterprises and kolkhozes. Commanders and political workers also would perform extensive political work among the local populace. Rallies and general citizens' meetings would be held with their participation. Political workers would give lectures and briefings to residents about current affairs, victories by Soviet troops, the inevitable defeat of fascist Germany, and tasks of the local populace to assist attacking Soviet forces.

In 1944-1945, when the Soviet Army was performing its liberation mission in Europe and Asia, tank armies and combined units often would be the first to enter the territory of neighboring countries. The military councils and political departments would begin immediate extensive political work among the populace aimed at explaining the noble liberation mission of the Soviet Army and the Soviet Union's policy with respect to liberated countries. They contributed to establishing democratic power on the basis of a wide bloc of all antifascist and anti-imperialist forces and organizations headed by party members. They called upon the populace to give active help to the new agencies of authority in conducting democratic transformations and in solving urgent political and economic problems.

The extensive, many-sided party-political work conducted among the personnel continuously and with growing force led to a decisive extent to the successful accomplishment of combat missions by tank armies, combined units and units during the offensive and supported the prominent role played by tank troops in all major offensive operations of the Great Patriotic War.

The experience of this work is instructive and has retained its current nature in many respects.

Conclusion

The Great Patriotic War makes up one of the most important stages in the history of organizational development of Soviet tank troops. During the war the Soviet Army's tank troops covered a long and difficult path in their development and combat perfection and rightfully became one of the primary combat arms and the chief shock and maneuver force of the ground forces.

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The striking force and high maneuverability of tank units, combined units and formations were deciding conditions for the successful conduct of deep offensive operations. The role of tank troops in conducting offensive operations, which grew exceptionally in the past war, was explained primarily by the fact that it was the tank units, combined units and formations with air support that had the greatest opportunity of shifting the attackers' efforts rapidly into the enemy's defensive depth. Only with the help of the tank troops and aviation could attackers bring more rapid and decisive pressure to bear on the enemy's operational reserves--one of the most important factors determining the stability of his troops.

All major operations of World War II occurred under the sign of battlefield dominance of tanks with air support.

During the war the USSR produced 104,000 tanks and SAU. There were 65,100 tanks and assault guns made in Germany, 25,100 tanks produced in England and 86,500 tanks and 16,000 SAU produced in the United States during the war. A total of some 300,000 tanks and SAU were produced in the chief states of the world during World War II, i.e., 30 times more than in World War I. The history of no single combat arm knows such rapid development.

At the war's end the Soviet Armed Forces had 6 tank armies, 23 separate tank and mechanized corps, as well as separate tank and self-propelled artillery brigades and regiments.

The tank troops also saw rapid development and extensive employment in the armies of other states. In 1944 the Armed Forces of fascist Germany had 31 panzer and 16 motorized divisions. During that year Germany's industry put out over 28,000 tanks and self-propelled guns. There were 1,200 tanks participating in the counteroffensive of fascist German forces in the Ardennes in December 1944. Even two months before the surrender, the Hitlerites threw some 900 tanks and self-propelled guns against Soviet forces in a very narrow sector of the front in the vicinity of Lake Balaton in March 1945.

At war's end the American-British forces in Europe had 28 armored divisions, 15 separate armored brigades and over 100 separate tank and anti-tank battalions with over 13,000 tanks and self-propelled guns. While not many more than 1,000 tanks took part in the offensive of British troops at El Alamein in October 1942, there were already over 6,000 tanks in the offensive operation of the American-British forces in Northern France in July 1944.

The consistent increase in numbers of tanks and aircraft participating in operations was one of the most important factors affecting a change in the conditions of armed warfare during World War II. It was the tanks and aircraft employed en masse both in the operational-tactical and the organizational sense that gave combat actions great scope, maneuverability and a high-speed nature.

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The swifter the actions of tank units, combined units and formations in an operation, the higher were the rates of advance of the main bodies of attacking fronts. In a report at the 12th Session of the USSR Supreme Soviet on 22 June 1945, Arm Gen A. I. Antonov, Chief of the Red Army General Staff, stated: "The latter half of the war occurred under the sign of dominance of our tanks and self-propelled artillery on the battlefields. This allowed us to accomplish operational maneuvers of enormous scope, surround major enemy groupings and pursue the enemy until total destruction."¹

The trend toward a consistent increase in the number of tanks and SAU participating in combat actions was fully confirmed in local wars. For example, in the war in Korea in 1950-1953, while an overall total of 1,500 tanks and SAU participated on both sides, there were over 2,000 of them in the armed conflict on the Hindustan Peninsula in 1971 and over 5,000 in the Arab-Israeli War in October 1973. In all these examples combat actions were conducted across relatively small fronts.

An analysis of the experience of local wars, particularly the October 1973 war, indicates that in a majority of instances the outcome of engagements and battles was determined by the actions of tank units and combined units. And so, despite heavy losses in tanks suffered by the combatants from ATGM's and aircraft, foreign military specialists, and the NATO command above all, believe that even under present-day conditions, the tank troops remain the chief shock force of the ground forces. As American military specialists assert, the war in the Near East not only did not refute conclusions of World War II experience, but reinforced and confirmed them even more.

We are speaking above all about the fact that the massive employment of tanks led to an increase in the mobility and shock force of ground forces, increased the capabilities for rapid formation of major troop groupings and for delivering a strong initial attack, and created real prerequisites for conducting a maneuverable war.

World War II experience shows that the increase in mobility of ground forces, massive use of aircraft and extensive use of radio communications led to the possibility of a significant expansion in spatial limits of combat actions conducted simultaneously, gave operations a deep and maneuverable character, and increased the tempos of the offensive.

The specific limits to coordination existing previously for groups of forces attacking separately were expanded and an opportunity now opened up for a unification of efforts of separate groups of ground forces attacking at a considerable distance from each other.

The extensive employment of tank troops and aircraft even back in World War II led to a situation where the front of struggle did not move evenly for its full extent as was the case in previous wars, but was shoved

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forward in some axes by the deep attacks by combined tank units, leaving a number of centers of struggle behind them.

The new conditions for waging armed warfare changed the importance of the time factor in war. They required the ability to foresee the course of rapidly developing events for a longer segment of time, and not as it was in the past.

In addition to a quantitative increase in production of armored equipment of the Soviet Army, there was a qualitative technical improvement in it during the Great Patriotic War.

Despite the high fighting features of the primary types of Soviet tanks such as the T-34 and the KV, the changing conditions of warfare demanded a further improvement in all tanks and SAU and the creation of new models of armored equipment. During the war two new light tanks (T-60 and T-70), two medium tanks (T-34-85 and T-44), six heavy tanks (KV-1, KV-1S, KV-85, IS-1, IS-2 and IS-3), and five models of SAU (SU-76, SU-85, SU-100, ISU-122 and ISU-152) were accepted into the inventory of Soviet troops in succession. Dozens of tanks and SAU were built and tested in the Soviet Union just during the war. A consistent strengthening of the firepower and armored protection of the Soviet Army's armored equipment was a general trend in its improvement. The methods of producing armored equipment also improved during the war, which contributed to an increase in the number of manufactured tanks and SAU and an increase in the reliability of components and mechanisms.

A constant attempt to ensure maximum combat independence for the Soviet tank troops was the primary trend in development of their organizational forms during the Great Patriotic War.

The need to ensure combat independence of tank and mechanized brigades and corps stemmed from the character of their combat employment, particularly during actions in the operational depth. Experience shows that after being committed to an engagement or battle, they were forced to accomplish the combat missions which arose for them independently, in isolation from the main body of armies and fronts and without close contact with neighbors.

The methods of conducting combat actions as well as the presence of armored equipment were the primary, determining factors which influenced a change in the forms of organization and their development and further improvement. The latter circumstance showed up most graphically in 1941, when mechanized corps and tank divisions were deactivated as a result of a sharp reduction in the tank inventory.

On the whole, the organizational structure of separate tank units and combined units intended for NPP made it possible to mass tanks on decisive axes. Meanwhile, the coordination of tanks and infantry in battle was

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hindered and great efforts were required for their joint battle teamwork with the frequent shift of tanks and self-propelled artillery units from some large combined-arms units to others. In addition, the frequent moves deprived tank units of individuality, since the commanders of rifle divisions and corps did not feel any responsibility for preserving the combat effectiveness of tank units, and hence for their proper combat employment.

These deficiencies were eliminated only after the war by including tanks and self-propelled artillery mounts in rifle units and combined units. These measures were not taken during the war because of the overall shortage of tanks and SAU.

There were different requirements for the organizational structure of tank and mechanized combined units for actions in the enemy's operational depth during an attack and also to repulse counterattacks and counterblows on the defense. Inasmuch as these combined units had to conduct all kinds of combined-arms warfare independently and at the same time have a high tactical and operational maneuverability, they had to possess combat independence, i.e., they had to include different combat arms and kinds of weapons. By virtue of this, the primary direction in development of the organizational structure of tank and mechanized corps in the war years was a strengthening of their combat might through the quantitative increase in basic weapons and a qualitative improvement in tank weaponry. During the Great Patriotic War our tank and mechanized corps had everything necessary to conduct combat actions independently in the enemy's operational depth with a significant separation from large combined-arms units. They had infantry, tanks, self-propelled artillery, field artillery as well as support units and subunits in their make-up. All this was in a specific and advisable proportion. The combat experience of the Great Patriotic War confirmed the vitality of the organizational structure of the units and combined units of our tank troops.

During the war a harmonious system of combat support to tank troops formed in the Soviet Army.

The primary methods for combat employment of tanks in offensive operations were their joint combat actions with infantry as means of direct support to the infantry (NPP tanks) or independent actions to exploit success in the operational depth.

Separate tank battalions, regiments and brigades were employed for joint combat actions with the infantry. The basic mission of tanks for direct support to the infantry was the destruction of enemy personnel and weapons within the limits of the tactical defensive zone. After penetrating the tactical defensive zone, NPP tank units and combined units usually would operate as forward detachments of rifle divisions and corps. In this instance they would receive mandatory reinforcement by artillery, chiefly self-propelled artillery.

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The primary trends in combat actions of NPP tanks during the war were as follows: an increase in densities of tanks and SAU per kilometer of breakthrough of from 5-20 to 40-45 units; the inclusion of self-propelled artillery mounts in the NPP tank groups; an increase in the proportion of medium and heavy tanks in the NPP groups; creation of NPP tank groups as part of second echelons of large combined-arms units; and a gradual transition to decentralization in control of small NPP tank subunits with retention of the principle of their mass employment.

Tank armies and tank or mechanized corps, which were attached to fronts and combined-arms armies for the period of an operation, were used as means for exploiting success in the Soviet Army. With the exception of a few isolated instances, they would comprise the echelon for development of success, which in the war years often was called a mobile group, in the operational alignment of the troops of a front or combined-arms army.

It was believed that commitment to a breakthrough should be the primary method of actions by tank combined units and formations comprising the echelon for development of success at the beginning of an operation. In other words, the mobile troops were supposed to begin combat actions only after the combined rifle units penetrated the main and sometimes even the second enemy defensive zone. The guideline for this form of employment of a tank army and corps stemmed from the desire to preserve their combat capabilities to the maximum extent for actions in the operational depth.

While correct on the whole, this theoretical proposition managed to be carried out very rarely in practice by virtue of the insufficient shock force of combined rifle units.

In a majority of instances, both tank (mechanized) corps and tank armies were forced to enter a battle before the infantry managed to accomplish a breakthrough and together with the infantry complete the breakthrough not only of the enemy's secondary defensive zones, but often even the main defensive zone.

The use of mobile combined units for completing the penetration of the main defensive zone naturally led to a certain drop in their combat capabilities. But these same actions led to a rapid build-up in the efforts of the attacker, sharply increased breakthrough rates and permitted the combined tank units to anticipate the approach of enemy reserves to the location of the breakthrough and accelerated their move into the operational depth. In the final account, all this provided for higher tempos in conducting an operation as a whole and in achieving greater operational results.

The war provided abundant experience in the combat employment of large masses of tanks in defensive operations. Tank armies and separate tank or mechanized corps of the Soviet Army were used on defense in a majority of cases for delivering counterblows and counterattacks. But there often

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were instances, especially in the Battle of Kursk and in the concluding phases of offensive operations, when armies and corps would be given independent defensive zones.

An analysis of the war's experience shows that the greatest effect of combat actions by tank troops was achieved in those instances when they were employed en masse. The war required a considerable expansion in the scale of massing tank troops right up to the framework of an operation. Two and sometimes even three tank armies and several separate tank and mechanized corps often would operate as part of one front in the final period of the war (Uman'-Botosani, Proskurov-Chernovtsy and L'vov-Sandomierz operations). Finally, the need not only for operational-tactical, but also organizational massing of tanks, which found practical implementation in the creation of tank armies, became fully obvious during the war years.

The successful actions by tank units, combined units and formations depended to a decisive extent on their interaction with other combat arms participating in the engagement or operation, and primarily with the infantry. War experience showed that despite the broad range of combat capabilities of the tanks, situations would arise during battle requiring close coordination of the tanks with other combat arms, including the infantry. The need for such coordination was felt especially acutely in penetrating deliberate enemy defenses, in the assault crossing of water obstacles, during combat in populated points and in conducting defensive actions. By virtue of this, combined tank units of all armies would have their "own" infantry in their make-up during the war years. For example, a Soviet tank corps would have nine tank battalions and six motorized rifle battalions in its make-up. The German panzer division would have 2-3 panzer battalions and 4 motorized infantry battalions, the US armored division would have three tank and three motorized infantry battalions, and the British armored division would have three tank regiments and nine motorized infantry battalions. The war provides many examples where attempts to employ tanks without infantry--and this occurred in all warring countries--usually suffered failure.

The rapid development of self-propelled artillery in the war years had as its logical result the need for close coordination between tanks and artillery. Some 90,000 self-propelled artillery pieces of various calibers were produced in the primary states participating in World War II. This was some 30-35 percent of the total number of tanks and SAU produced in the war years.

The Great Patriotic War confirmed the extremely great importance of the coordination of tank units and combined units with airborne troops and aviation. As soon as combined tank units were deprived of air support, their rates of advance dropped sharply and sometimes their forward movement stopped entirely. The Vistula-Oder Operation is especially indicative in this regard. It is generally known that the delay in maneuvering airfields in this operation had a substantial effect on the course of combat actions by tank armies of the 1st Belorussian Front.

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On the whole, in our days the experience of the Great Patriotic War already is being taken as the experience of history. Its study today is of interest from the standpoint of understanding the basic trends in development of military art. It shows how and in what direction the development of equipment and people's military expertise affected an improvement in the techniques of warfare. Imaginative use of this experience will permit a deeper understanding of processes occurring in contemporary military affairs and a clearer understanding of the inevitability of changes in the theory and practice of armed warfare and in organizational development of the Armed Forces. A study and thorough consideration of the war's experience keeps us from groundless fantasizing and from the extremes. It introduces elements of practical experience into theoretical discourse and provides very abundant material for conclusions for the future.

An analysis of postwar development of military theory in the major states of the world indicates that the experience of past wars, especially World War II, even under present-day conditions is a very important criterion for evaluating new forms and methods of conducting combat actions, including the methods of combat employment of tank troops.

The practice of postwar organizational development of Soviet Armed Forces provides brilliant confirmation of one of the fundamental methodological statements by V. I. Lenin: "We cannot learn to solve our problems by new techniques today if yesterday's experience has not opened our eyes to the incorrectness of old techniques."¹

History teaches that the more that military cadres work in peacetime to substantiate new provisions of military art, and the greater the detail and care they use in testing theory by experience and operational training, and especially by actual combat experience, then the closer such theory will be to living reality and to new demands.

Appendix 1. Panzer Forces of Fascist Germany in World War II

An analysis of the status of armored equipment of the fascist German Army in World War II thus indicates that its development took the path of increased firepower, increased reliability of armor protection and an increase in mobility. The growth of firepower was achieved by increasing the calibers of guns, creating special tank guns with a long tube and high initial velocity of shells, the adoption of special types of shells in the unit of fire, and an improvement in fire and observation instruments. The primary trends in an increase in the reliability of armor protection were an increase in thickness of armor plates of the hull and turret, a shift to differentiated armor plating, and the use of optimum tilt angles of armor plates and protective shields.

1. V. I. Lenin. "Polnoye sobraniye sochineniy" [Complete Collected Works], XLIV, 205.

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But the fascist German tanks and SAU had an insufficient range, low average speeds, considerable weight, and high ground pressure. This reduced their mobility and trafficability and limited the depth of operation. The Wehrmacht's tanks and SAU were inferior to the similar Soviet models in all basic indicators.

In the first period of World War II and in the summer-fall campaign of 1941 tank troops of the RGK [High Command Reserve] did not receive proper development in the fascist German Army. Only after the defeat of Hitler's forces at Moscow, causing a fundamental turning point in the course of the war, did there begin to be formation of a large number of assault gun battalions and later of separate heavy tank battalions,¹ antitank battalions,² assault gun brigades,³ and tank brigades. With these steps the fascist German command attempted to make up for deficiencies in the organizational structure of panzer and motorized divisions and for their constantly decreasing combat capabilities.

Thus in World War II the basic organizational forms of tank troops of the fascist German Army were panzer and motorized divisions, panzer corps, panzer armies, and also units and combined units of the High Command Reserve. Their organizational structure was changed repeatedly during the war, as affected by the character and course of struggle at the Soviet-German Front. Despite the inclusion of self-propelled field artillery and heavy tanks in their make-up and despite an increase in the number of APC's and other means of warfare, the combined units and formations of the Wehrmacht's panzer forces suffered defeat under the crushing blows of Soviet troops. "The attempt by the German command to eliminate an unfavorable operational-tactical situation by conducting organizational measures was not crowned with success..."⁴

The experience of the Wehrmacht's combat operations in wars against Poland, the countries of Western Europe and in the Balkans showed that tank combined units and formations were capable of accomplishing various combat missions in the offensive, giving operations great depth, a maneuverable character and a high tempo. At the same time, this experience was not critically interpreted or analyzed. "...The course of combat actions by the Wehrmacht in Western Europe showed that a stable trend was being manifested in the military leadership of Germany toward an overestimation of their capabilities and weapons and an underestimation of enemy strength. . . . The experience of combat operations gained in France began to be absolutized and the forms and methods of conducting operations in the West were deemed universal and suitable for employment under all conditions and against any enemy."⁵

1. There were 32-45 heavy T-VI tanks in the separate battalion.
2. There were 45 antitank SAU in the battalion.
3. There were 31-45 assault guns in the brigade.
4. E. Middeldorf. "Tactics in the Russian Campaign," translated from the German, Moscow, 1958, p 53.
5. "Istoriya vtoroy mirovoy voyny 1939--1945" [History of World War II: 1939-1945], Vol. 3, p 122.

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The basic part of the Wehrmacht's tank and motorized combined units was operating at the Soviet-German Front in World War II. Several mobile combined units were fighting in North Africa, Italy and at other fronts, but did not have substantial influence on the combat employment of tanks. All deficiencies of the theory of tank combat employment were revealed in all their completeness during fascist Germany's war against the Soviet Union. In the period 1941-1942 tank troops were used primarily in offensive operations. They were employed in defensive operations in connection with fascist Germany's shift to a strategic defense in the fall of 1943 and up to the end of the war, where they took part in counterblows, counterattacks and delaying actions.

Despite the fact that the Blitzkrieg theory suffered failure as a result of the heroic efforts of the Soviet people and their Armed Forces in the winter of 1941, the Hitler command continued to adhere to previous views on the strategic employment of tank troops until the war's end. But it made an attempt to adapt the actions of its forces to the changed character of the war in operational art and in tactics during the period 1943-1945.

Borrowing from the experience of Soviet armored forces, the German command changed the composition of combat groups in the panzer division in combined units and units, where tanks worked closely together with the motorized infantry. The influence of the Soviet Army's combat experience was seen in an increase in artillery densities in the breakthrough sector, in shifting to night combat operations and so on.

Deserving attention in the combat actions of fascist German panzer forces in various periods of the war was the close and well-organized coordination with aviation (1941-1943), extensive employment of technical means of communications for control, coordination with tactical airborne landings (1941), and close coordination with self-propelled field artillery at the level of the tank division combat group.

On the whole, the theory of combat employment of tanks was just as insolvent in the fascist German Army as was the Wehrmacht's entire military theory.

Appendix 2. Tank Forces of the United States and Great Britain in World War II

By the beginning of World War II proper attention was not being given to the development of armored troops in the armed forces of the United States and Great Britain. The armies of these countries did not have a sufficient number of combined tank units and their weapons did not fully meet the demands of modern warfare. On the eve of the war the make-up of the regular Army in the United States had one separate armored brigade, and in Great Britain it had nine tank brigades.

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For this reason the United States and Great Britain were forced to solve the problem of forming armored divisions, brigades and battalions during the war, designing and producing different models of armored equipment in short periods of time and developing a theory of their combat employment.

The war's experience indicates that despite a highly developed industry, these countries were not able to create highly effective models of tanks which were the equals of the Soviet T-34, KV, IS and other tanks. The United States and Great Britain were forced to change the design of their tanks and SAU repeatedly, since they were considerably inferior in their characteristics to the tanks of fascist Germany. Despite borrowing on the experience of organizational development and combat employment of Soviet forces, the United States and Great Britain did not manage to solve the problem of creating major tank combined units and formations or developing a harmonious system of their employment.

By the beginning of World War II the tank inventory of the American Army was small and consisted chiefly of light and medium tanks. There were no heavy tanks, self-propelled artillery or APC's.

The light tanks had weak combined weapons, armor protection against bullets and high mobility. The American tanks were not able to combat German tanks successfully. Therefore the United States was forced to begin building new models of armored equipment urgently during the war.

The basic models in the inventory of American Army tank combined units and units during World War II were the light M2, M3, M5, M22 and M24 tanks, the medium M2, M3 and M4 tanks, heavy M6 tanks, various models of SAU, amphibious and other specialized tanks, armored vehicles and APC's

During World War II self-propelled artillery became widespread in the U.S. Army. It was divided into three kinds--field, antitank and antiaircraft. Tanks and half-track APC's were the basis for building the SAU. The 75-mm, 105-mm and 155-mm howitzers usually were used to arm the field SAU. A majority of self-propelled field artillery pieces were of the open or semienclosed type with protection against small arms fire.

Consequently, the development of armored equipment in the U.S. Army was characterized by an improvement in light and medium tanks, by the building of heavy and specialized tanks, and by extensive development of self-propelled artillery, half-track APC's and full-track APC's. The basic directions in improvements to armored equipment were:

--An increase in firepower, achieved by shifting to single-tube weapons of heavy caliber, an improvement in ammunition, the use of stabilizers, and an improvement in fire and observation instruments;

--A reinforcement of armor protection, achieved by increasing the thickness of armor plates and using rational tilt angles;

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--An increase in maneuverability achieved by increasing the power of propulsion units and an improvement in the transmission and driving controls.

But despite the modernization, the American Army's medium and heavy tanks were inferior to fascist German tanks in firepower and cruising range. A total of 86,500 tanks and 16,000 self-propelled guns were produced in the United States in the war years.¹

The U.S. Army's armored troops in World War II thus consisted of separate tank and antitank battalions, battalions of amphibious tanks and transporters, air assault battalions and companies, and armored divisions.

The basic direction in development of the organizational structure of armored troops was an increase in the number of divisions, the inclusion of SAU in their make-up, and their saturation with combat equipment and weapons. At the same time, an absence of formations and major combined units, the cumbersome nature of the organizational structure, the parceling out of tanks to numerous units, and the presence of a considerable number of support subunits reduced their combat capabilities.

During World War II a total of 16 armored divisions, 55 separate tank battalions, 68 separate antitank battalions, 10 separate amphibious tank battalions, one airborne tank battalion, several airborne tank companies and 16 amphibious transporter battalions were formed in the United States.

At the beginning of World War II German and French views on the employment of tanks were dominant in the U.S. Army but they had not been assimilated to the proper extent. The experience of combat operations in North Africa, Italy and Western Europe indicates that in the majority of instances armored divisions were employed in a dispersed manner and were distributed among the army corps. This reduced their combat capabilities. For example, when the U.S. First Army attacked the Siegfried Line in September 1944, three of its armored divisions operating on scattered axes penetrated enemy defenses, but were thrown back on almost all axes by counterblows.

American forces achieved great success by massing their armored divisions, as occurred in Normandy in July 1944, where there were two divisions each operating as part of the VII and VIII army corps. They completed the breakthrough of the main zone, developed success and contributed to the successful offensive into Brittany and toward Paris. Contributing to the Americans' success was the fact that the best forces of the fascist German Army were being used against the Soviet troops.

In a majority of cases armored divisions were employed in the second echelon. They would be committed at a depth of 4-6 km for the purpose of completing the breakthrough of the enemy's tactical defensive zone. A

1. Cf: Appendix to journal MIROVOYE KHOZYAYSTVO I MIROVAYA POLITIKA [World Economy and World Politics], No 10, 11, 1946.

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division usually would attack with two combat groups in the first echelon and one in the second echelon. If enemy resistance was weak, then all three groups might operate in the first echelon. Each combat group consisted of 1-2 tank battalions and 1-2 motorized infantry battalions reinforced by artillery and combat engineers. Employment of the division in the first echelon also was possible.

The armored division was employed in the defensive depth to capture important lines (objectives) from the move, to conduct the pursuit, to disrupt control and to delay the approach of enemy reserves.

Tank densities reached up to 100 vehicles per kilometer of front. That was the case, for example, when the VII Army Corps attacked west of Saint-Lo on 25 July 1944.¹

Aviation carried out the primary mission of suppressing the enemy. Coordination with it often was disrupted, which led to slow rates of advance. According to the specialists' admission, "the American method for employing armored troops during World War II violated the principle of their massing."²

Separate tank and antitank battalions were employed to reinforce infantry divisions by operating as NPP tanks. Their combat formation was formed in 2-3 echelons. Medium tanks operated in the first echelon, destroying antitank weapons and artillery. Following them were light and medium tanks, which destroyed the infantry and its weapons. The third echelon supported the infantry's advance. The battalion would advance across a front of 700-1400 m or more. The density of NPP tanks was 12-24 or more tanks per kilometer.³ Antitank battalions were employed partially for supporting infantry regiments and were in the division commander's reserve. Tank battalions would operate in forward detachments after penetrating the defenses.

Tanks also were widely employed in amphibious landing operations. For example, in the landing in Normandy, the armored division was used in the second echelon and there were separate tank and antitank battalions and amphibious tanks in the make-up of every infantry division.

Limited experience was gained in employing tanks in airborne landing operations.

The American forces received some experience in employing armored troops on the defense. Tank combined units and units were employed primarily in

1. Cf: A. D. Bagreyev, Voennoye iskusstvo kapitalisticheskikh gosudarstv 1939--1945" [Military Art of Capitalist States: 1939-1945], Moscow, 1960, p 190.
2. "Bronetankovyye voyska armii SShA" [Armored Forces of the U.S. Army], Moscow, 1956, p 91.
3. Cf: Bagreyev, p 192.

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the second echelons and were intended for delivering counterblows and counterattacks. In individual instances they conducted delaying actions, screening infantry units as the latter took up a defense. In exceptional instances they were also employed for holding important areas until the arrival of combined infantry units. When army corps shifted to the defense, which occurred in the final phase of the operation, armored divisions would be moved to the second echelon or the reserve. In this case they would be situated 12-20 km from the forward edge.

During the operation in the Ardennes, armored divisions would shift to a defense on hastily occupied lines in the defensive depth and would take part in counterattacks and counterblows, but in a number of instances they suffered heavy losses while acting in an isolated grouping and did not carry out their missions. The limited character of employment of American tank troops and their combat operations conducted against a weakened enemy reduced the importance of the experience they gained.

The basis of the British Army's armored forces in World War II thus consisted of armored brigades and armored divisions.

The primary direction in development of their organizational structure was an increase in the number of units and combined units, and an increase within them of the amount of motorized infantry, artillery, medium, heavy and specialized tanks and combat equipment.

Major tank combined units were lacking, but in some cases army corps were made up of armored divisions.

A total of 11 armored divisions and 30 armored brigades were formed in Great Britain during World War II.

The experience of combat operations by British tank troops in various theaters of World War II attests to the fact that they were employed in a scattered manner across a broad front, without proper coordination with other combat arms. In some instances the British command would bring two or three armored divisions together into one army corps, as was the case at El Alamein and Caen (1942-1944). In these instances three armored divisions each were operating in the X and VIII army corps.

In the majority of instances, armored divisions would operate in the corps second echelon in penetrating a deliberate defense and would be committed to complete the breakthrough of the main defensive zone and to overcome subsequent positions in the tactical defensive zone. The unsuccessful experience of their employment in the first echelon, as was the case at Caen¹ and, in the fall of 1944, in Operation Market Garden² in Holland, influenced such employment.

1. On 18 July 1944 armored divisions of the VIII Army Corps in the vicinity of Caen were operating in the first echelon and suffered heavy losses.
2. An armored division was operating in the first echelon of the XXX Army Corps, and infantry divisions were operating in subsequent echelons.

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Offensive operations by British tank combined units and units thus were characterized by a methodical nature, striving for a frontal attack, and an absence of maneuver. On the defense they would deliver counterattacks and counterblows and, in some instances, they were employed for holding important lines and areas on their own.

Considering the limited value of the experience of their own tank troops, U.S. and British military circles pay great attention to the study of the combat experience of Soviet tank troops.

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BOOK EXCERPTS: AUTOMATING CONTROL OF ARTILLERY OPERATIONS

Moscow VOPROSY AVTOMATIZATSII UPRAVLENIYA BOYEVYMI DEYSTVIYAMI ARTILLERII in Russian 1979 signed to press 5 Jul 79 pp 1, 3-21, 155-159

[Excerpts from book by B. D. Lebedev and N. I. Myakin "Voprosy avtomatizatsii upravleniya boyevymi deystviyami artillerii" (Aspects of Automating Control of Artillery Combat Operations), Voenizdat, Moscow, 1979, 8,000 copies, 159 pages]

[Excerpts] The book presents principles of controlling artillery combat operations and the organization of control using technical means of automation. It examines problems solved in automated control systems and problems of preparing data and supporting fire. It reveals aspects of automation and the organizational structure of subunits and presents the selection and elaboration of problems solved using electronic computers. The book uses material published in the open foreign press.

The book is intended for specialists in the field of command and control, for students and cadets of military educational institutions studying the control automation course, and for readers interested in this subject.

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Foreword

The struggle to gain time is a most important problem in the process of command and control, including artillery command and control. The time spent for decisionmaking and informing subordinates of the decision serves as one of the primary criteria of the combat readiness of staffs.

An increase in efficiency in the work of artillery commanders and staffs must be combined without fail with an increase in the quality of artillery control in a battle and operation. The quality of control is above all a commander's capability to orient himself confidently in a situation, develop substantiated decisions for the combat employment of artillery, assign combat missions correctly, organize coordination, support artillery operations in every possible way, and implement his decision firmly and persistently.

In connection with the growing complexity in conditions of control of artillery in modern warfare, there is a significant increase as well in such demands on control as constant combat readiness of all elements of control, effectiveness, firmness, flexibility, continuity, stability and secrecy.

Special demands are placed on the operation of communications facilities and on their reliability and survivability as very important conditions of stability and continuity of artillery control.

This all makes it necessary to have a continuous improvement in the system of artillery control in the battle (operation) and development of the theory of artillery control.

As shown by the practice of armies of the primary capitalist countries, the creation of automated systems for control (ASU) of troops is the primary direction in improving control.

The contemporary level of development of computer technology and data transmission facilities opens up broad opportunities for developing and introducing a technical base of automation. And existing mathematical methods allow the formalization of basic control problems.

Thus all preconditions are present for successful development and introduction of an automated system for control of artillery.

The presence of technical means of automation may lead to a change in the organizational structure of artillery and control entities. This occurs if automation involves a redistribution of control functions among echelons (points) of control and performers at each echelon, as well as the appearance of new control functions.

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According to the experience of foreign armies, one of the primary merits in the use of automated systems is the opportunity for staffs to solve those problems which previously were not solved at all because of their laborious nature or were resolved too approximately. This concerns both informational and computational operational-tactical problems.

As noted in the foreign press, the development and introduction of automated systems involves the solution to a number of complex problems. They include in particular:

- Determination of the necessary degree of automation of each control echelon;

- Determination of the minimum necessary input data and degree of detailing;

- Identification of the requisite degree for generalization of output data for transmission to higher control echelons;

- Selection of and designing of algorithms for operational technical problems;

- Development of diagrams of functional and data links in the system ensuring continuity and flexibility of control.

Specialists believe that the development of an automated system for control of artillery must proceed in two directions. First of all, it is a study of the functions and operating methods of control entities, an analysis of the data flows in the system under the most intense conditions of combat operations, and a determination of the list of operational-tactical control problems for formalization and for their subsequent realization in the automated system. Secondly, it is the development of a corresponding technical base and also mathematical and data support of the electronic computer (EVM) and of the system as a whole for solving operational-tactical problems.

Chapter 1. Principles of Artillery Combat Employment

1.1. Principles of Artillery Combat Employment

Success can be achieved in modern warfare only through the joint efforts of all combat arms.

The great firepower and shock force of contemporary weapons and high troop mobility allow delivering sudden crushing blows against the enemy and achieving his defeat in short periods of time. In this regard, contemporary warfare is distinguished by its decisiveness, high maneuverability, dynamic nature, and rapid and abrupt changes in the situation.

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The decisiveness and speed of operations in combination with the commanders' display of imaginative initiative and their use of military cunning are a very important condition for achieving success in contemporary warfare.

The swiftness of troop combat operations contributes to the fullest and promptest exploitation of the results of weapons employment, the attainment of surprise, seizure of the initiative and accomplishment of combat missions with the least expenditure of personnel and resources.

Artillery plays a substantial role in accomplishing the combat missions assigned to troops. Artillery possesses great firepower, accuracy of fire, and the capability for extensive maneuver, sudden massing and concentration of fire in short periods of time against the most important enemy targets to a considerable depth. Artillery is capable of hitting various targets (in the open and under cover, moving and stationary, observed and unobserved), and of continuously supporting by fire the operations of combined-arms units and subunits in battle. A high rate of fire permits artillery to create fire of high density and its capabilities of maneuver ensure the rapid and concealed concentration of the primary mass of artillery on decisive axes.

When settings for firing are determined on the basis of full preparation, artillery is capable of opening up sudden and accurate fire against the enemy, which contributes to concealment of preparation for combat, surprise in beginning combat and reliability in hitting enemy targets.

The organization of artillery combat operations is based on principles of its combat employment as confirmed by Great Patriotic War experience and by postwar troop practice. They include the following:

- Massing of artillery and its fire on the most important axes to accomplish the primary missions;
- Extensive maneuver by large units, units and subunits and of their fire;
- Continuous support of combined-arms units and subunits during the entire battle;
- Constant coordination with combined-arms units and subunits, with aircraft and, when operating on coastal axes, with naval ships.

The massing of artillery and its fire consists of concentrating the primary mass of artillery on the axis of main attack and of the decisive defeat of the most important groupings in very short periods of time.

Development of the principle of massing artillery and its fire can be traced in the Great Patriotic War experience. During the war the massing of artillery grew from operation to operation both in the quantitative and the qualitative aspect.

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Evidence of this is the increase in operational and tactical densities of artillery per 1 km of breakthrough sector frontage in offensive operations. The operational density of artillery in the winter campaign of 1941/42 was only 20-60 guns, mortars and rocket artillery (RA) combat vehicles, while it reached 300-350 guns, mortars and RA combat vehicles in the concluding operations.

Tactical densities of artillery in breakthrough sectors of large units and units operating on main axes rose from 40-70 in the initial offensive operations to 350-500 by war's end.

The maneuver of artillery consists of a shift in artillery units and subunits laterally and in depth in order to create a favorable grouping for accomplishing the assigned missions.

The maneuver of artillery fire is accomplished by its simultaneous or successive concentration (massing) against the most important enemy objects and targets (groupings) or by its allocation for simultaneous destruction of several objects or targets (groupings).

Continuous support of combined-arms units (subunits) is ensured through the timely and reliable suppression and destruction at each moment of battle of enemy personnel and weapons blocking the accomplishment of combat missions by the combined-arms units and subunits.

Coordination of artillery with combined-arms units (subunits) and aviation is accomplished through the coordinated delivery of attacks and fire and coordination of artillery maneuver with the operations of combined-arms units (subunits) by missions, axes, lines and time.

The battalion is the basic artillery fire and tactical subunit. It consists of several firing batteries and a headquarters subunit. The battalion control entity is its staff.

A battery is a fire and tactical subunit. It includes several weapons platoons and a headquarters subunit. The battery usually operates as part of the battalion, but it can perform missions independently as well.

The weapons platoon is a subunit consisting of one or more pieces (mortars, combat vehicles with teams). A weapons platoon usually accomplishes fire missions as part of a battery, but sometimes it does so on its own.

The artillery piece (mortar, combat vehicle) usually operates in combat as part of the platoon.

The headquarters subunits of the battalion and battery are intended to perform reconnaissance, service firing and organize communications.

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The battalion operates as part of its own unit, an artillery group, or independently. It can be assigned to support a combined-arms unit (subunit) or it may be attached to that unit or subunit. In conformity with this, the battalion may be supporting or attached.

A supporting artillery battalion (battery) remains subordinated to its commander and carries out fire missions assigned by the commander of the combined-arms unit (subunit) which it is assigned to support.

An attached artillery battalion (battery) becomes subordinate to the commander of the combined-arms unit (subunit) to which it is attached and carries out all his orders. But this does not preclude the possibility of using the artillery battalion to accomplish fire missions in the interests of the senior commander. As a rule, an artillery battalion (battery) is assigned to support a [tactical] battalion.

During an attack, a supporting artillery battalion (battery) may become attached at full strength or by battery. This is done in order to reinforce a combined-arms subunit with weapons to accomplish missions which arise.

Such conditions place special demands on the organization of control of the artillery battalion and on coordination with the combined-arms subunit. The artillery battalion commander's collection, study and analysis of data of the combat situation, his development and making of a decision, and making the missions known to the subunits must ensure efficiency in opening fire and high effectiveness of fire. Only in this instance can one count on the combined-arms units and subunits performing their combat missions to defeat the enemy and capture his territory. On the defense an artillery battalion can be attached to a combined-arms unit, and a battery may be attached to a subunit.

Artillery subunits which are part of a unit or a [tactical] battalion usually are employed in the immediate interests of their own subunits.

An artillery battalion and battery deploy into combat formation to perform fire missions.

The artillery battalion's combat formation consists of the batteries' combat formations, the command-observation post (KNP), the battalion fire control post (PUO) and, where necessary, the battalion's observation posts (OP's)---forward and lateral.

The battery combat formation consists of the weapons platoons located at a firing position, the KNP and, where necessary, the battery OP--forward and lateral.

The battalion and battery combat formation must ensure the most effective and reliable performance of assigned missions, best employment of the subunits, convenience of organization and stability of control, an

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opportunity for accomplishing a timely maneuver, a concealed location, and least vulnerability to enemy mass destruction weapons, artillery fire and air strikes.

The firing positions of batteries in a battalion usually are located at a distance of 800-1000 m from each other. Because of conditions of a combat situation, the location of all batteries in the immediate vicinity is possible at times.

According to the degree of protection against observation by ground reconnaissance facilities, firing positions are divided into indirect and direct firing positions.

According to the degree of their use, firing positions are divided into primary (for accomplishment of fire missions), temporary (for accomplishment of individual fire missions) and alternate (in case of maneuver or forced abandonment of the primary firing position).

The KNP is intended for control of battalion (battery) fire and maneuver, for reconnaissance and for observation of friendly troop actions. The battalion (battery) commander is located at the KNP with personnel and resources necessary for control.

The battalion PUO usually is located in the vicinity of the firing position of one of the batteries. Located at the PUO are the battalion chief of staff, computers, surveyors, radiotelephone operators, and also a weather station with necessary instruments and equipment.

The staff usually is located in a command and staff vehicle with means for supporting fire control.

The battalion staff organizes the topographic survey; meteorological, ballistic and technical preparation of firing; communications and coordination with technical means for servicing fire. It monitors the batteries' readiness to open fire. It arranges for the determination of settings for the batteries' fire after their movement. It determines necessary data for battalion fire and monitors the accuracy of settings in the batteries as well as their accomplishment of fire missions. It keeps a record of ammunition expenditure and arranges for its replenishment.

The forward OP is intended for reconnoitering the enemy, examining close approaches to the forward edge of friendly forces, maintaining close communications with the combined-arms subunits and for adjusting fire on targets not observed from the KNP.

A lateral OP is intended for reconnoitering the enemy and terrain in areas unobserved from the KNP and the forward OP, for intersecting targets (combined observation), observing the results of fire and adjusting fire.

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The KNP and OP may be located directly on the terrain or in vehicles (command and command and staff) specially outfitted with instruments for observation, topogeodetic survey, and fire control as well as communications facilities.

Depending on the situation, the assigned mission and the nature of the target, artillery subunits conduct annihilation fire (inflicting such losses on the target where it completely loses combat effectiveness), destruction fire (placing the target in an unserviceable condition), neutralization fire (inflicting such losses on the target where it is temporarily deprived of combat effectiveness, its maneuver is limited or control is disrupted), and harassing fire (conducting disturbing fire for the moral-psychological effect on enemy personnel).

Artillery fire must be timely and effective, i.e., it must ensure the attainment of the requisite result of damage to the target.

Timeliness of fire is achieved by high combat readiness of artillery subunits, by maintaining continuous coordination with motorized rifle and tank units or subunits, by continuous reconnaissance of the enemy and observation of the operations of friendly forces, by preplanning the fire and maneuver of artillery subunits, by timely assignment of missions and also by reliable and flexible fire control.

The requisite result of damage to the target by artillery fire is achieved by proper selection of the means of target destruction, by high accuracy of fire and suddenness in opening fire, by designating the best procedure for accomplishing the fire mission and the method of bombarding the target.

The primary targets for destruction by artillery are means of nuclear attack, artillery (mortar) batteries and platoons, AAA and SAM [surface-to-air missile] batteries (sections), radio-electronic equipment, personnel and weapons in strongpoints, tank subunits in assembly areas, on the march and in combat formations, antitank weapons, and control points.

Destruction of the enemy can be accomplished by the following kinds of fire:

--Fire against an individual target (conducted by a battery, platoon or piece);

--Concentrated fire of several batteries or battalions overlapping on one target;

--Defensive fire (fixed and moving)--a solid curtain of fire (on one or several lines in succession) to repulse attacks or counter-attacks by enemy tanks and infantry;

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--A successive fire concentration--concentrated fire on targets in front of and on the flanks of friendly attacking forces, shifted successively from line to line as the troops advance;

--A moving barrage--a solid curtain of fire to the front of friendly attacking forces (on one or simultaneously on two lines), shifted forward successively as the troops advance.

1.2. Missions of Artillery in Combat

In the attack an artillery battalion (battery) is used for artillery preparation of the attack, artillery support of the attack, and artillery accompaniment of attacking troops in the depth of enemy defenses.

Artillery preparation of an attack immediately precedes an attack by motorized rifle or tank units and is conducted to the defensive depth of enemy first echelon units and, against the most important targets, to the depth of the maximum range of fire for destruction and suppression of such targets.

The duration and organization of artillery preparation are determined by the commander's concept, character of enemy defenses, scope of missions being accomplished by artillery, and the availability of guns and ammunition. The time needed by first echelon subunits to move forward and deploy for the attack also is taken into account in an attack from the move.

Artillery preparation usually consists of several concentrations. It begins with a sudden powerful concentration of all artillery against means of nuclear attack, batteries, personnel, antitank and other weapons inside and outside company strongpoints of first echelon battalions, control points, radiotechnical facilities, communications centers and reconnaissance facilities. Subsequent concentrations are conducted against targets disposed in the depth of defenses (especially those filled with antitank weapons). Artillery assigned for direct fire accomplishes missions of destroying weapons and demolishing enemy defensive structures on the forward edge and in the immediate depth.

Artillery preparation ends with a powerful concentration against strongpoints of first echelon companies, antitank weapons outside the strongpoints, and artillery and mortar batteries.

Artillery support of the attack begins from the moment of movement of first echelon subunits from the line of departure and lasts continuously until the capture of defensive areas of enemy first echelon battalions. During this time the artillery hits newly detected means of nuclear attack, artillery, antitank weapons and control posts. Neutralization continues of the strongpoints in front of and on the flanks of the attacking subunits and enemy maneuver is prohibited.

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Artillery support is accomplished by a successive fire concentration, a rolling barrage, a fire concentration, and fire against individual targets. Firing is conducted both from indirect firing positions and from direct firing positions by direct laying.

The first successive fire concentration or rolling barrage line usually is designated against the forward edge of defense. A shift of fire to subsequent lines is accomplished when attacking subunits arrive at the troop safety line.

In the period of artillery accompaniment of attacking troops in the depth of enemy defenses, artillery conducts fire against newly detected enemy means of nuclear attack; it neutralizes targets offering resistance to attacking first echelon subunits; it supports the commitment of second echelons (reserves); it screens intervals between subunits and exposed flanks; it prohibits enemy maneuver and supports the subunits in repulsing enemy counterattacks, in making assault crossings of water obstacles, and in defeating an enemy consolidated on intermediate lines. In this period artillery is also assigned missions of supporting tactical airborne landing forces during their flight, landing, and operations in the depth of enemy defenses.

An artillery battalion (battery) on the defense:

--Hits means of enemy nuclear attack, enemy artillery, air defense weapons, electronic equipment and control posts;

--Prevents the approach of an enemy and deployment of his subunits for the attack;

--Supports the forward detachment in the security zone and subunits defending an advance position and a combat security position;

--Takes part in counterpreparations;

--Uses fire to screen intervals between subunits, exposed flanks and breaches formed as a result of enemy nuclear strikes;

--Repulses attacks by enemy tanks and infantry;

--Hinders a further spreading of an enemy wedged into the defense, and hinders the approach of his reserves;

--Supports a counterattack by second echelons and reserves;

--Combats enemy airborne landings;

--Illuminates the terrain and targets at night;

--Combats enemy means of illumination.

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In defending a fortified area, the artillery battalion (battery) additionally screens approaches to permanent type emplacements; it hits enemy assault groups blocking permanent type emplacements; and it supports subunits unblocking them.

Artillery battalions (batteries) and artillery may be used for participation in counterpreparation. In this instance they perform fire missions according to the plan of the artillery staff or chief of artillery of the motorized rifle regiment.

Destruction of enemy tanks is one of the most important missions of artillery on the defense. The artillery battalion (battery) destroys tanks and armored vehicles: by concentrated fire (by fire against individual targets) as they approach the defense and deploy into combat formation, and when they wedge into the defense; and by defensive fire in repulsing an attack by tanks and motorized infantry.

1.3. Principles of Control of Battalion (Battery) Combat Operations

Control of an artillery battalion's combat operations is a continuous and, by its nature, an informational process of collecting and evaluating situation data and processing them into controlling influences of the commander, battalion staff and political entity over artillery subunits with the help of developed methods and equipment for ensuring, at any moment in time, the timely preparation of combat operations and readization of capabilities of such subunits for defeating by fire the most important enemy targets (objectives) and for creating the most favorable conditions for motorized rifle or tank subunits or units for successful accomplishment of assigned missions with minimum possible losses.

Control of combat operations of the artillery battalion (battery) is formed from control of artillery reconnaissance subunits, control of the fire and maneuver of weapons subunits, and control of support subunits.

Control of combat operations of the artillery battalion (battery) includes on the whole the following primary measures: maintaining constant combat readiness of the artillery battalion (battery) and high moral-political condition of personnel at each moment of time in combat; the collection, study and analysis of data on the enemy and friendly troops affecting the combat operations of the battalion (battery); timely decisionmaking and making missions known to subordinates rapidly; the organization of continuous control of artillery reconnaissance, fire and maneuver and comprehensive support of subunits of the battalion (battery); the organization and maintenance of continuous coordination with a combined-arms unit (subunit) to which the battalion (battery) is attached or which it is supporting; exercise of constant supervision over the accomplishment of assigned missions by subunits of the battalion (battery) and providing them assistance; and organization of a reliable system of communications.

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The basic requirements placed on control are its efficiency, effectiveness, continuity, firmness, flexibility and secrecy.

Efficiency of control presumes the thorough substantiation of decisions and corresponding plans for combat operations and their logistical sufficiency, capable control of fire and maneuver, and attainment of the requisite defeat of the enemy by fire with least expenditures of personnel and materiel at any point of time in combat.

Continuity of control is achieved through timely decisionmaking and making missions known to subordinates rapidly; by reliable communications with subordinates, the combined-arms unit or subunit with which coordination is being accomplished, and with the senior commander; by carrying out measures for protection of friendly electronic equipment against enemy reconnaissance and electronic countermeasures; by the capable location of control posts and their timely deployment and movement during battle; by rapid transfer of control (where necessary) from one post to another and by restoring disrupted control.

Firmness of control consists of the decisive, persistent execution of the decision and assigned mission at the designated time.

Flexibility of control is provided by swift reaction to a change in the situation and by prompt updating of a previously made decision and missions of the subunits, as well as of coordination procedures.

Secrecy of control is provided by keeping all measures of troop command and control secret from the enemy.

The artillery battalion commander bears personal responsibility for constant combat readiness of the subunits and their successful accomplishment of missions in combat.

The battalion staff is the basic entity for control of the battalion's combat operations. The chief of staff is responsible for organizing combat operations of the subunits and for firm, continuous control of the battalion's subunits.

The commander of the battalion (battery) controls subunit combat operations from a KNP or OP personally and through the staff (while the battery commander does so only personally) by issuing verbal operation orders and instructions and giving commands. The primary mission of the staff is planning subunit combat operations under the direction of the battalion commander, collecting information on the enemy, on the position and condition of friendly subunits and on progress in accomplishing assigned missions, and exercising supervision.

If the battalion (battery) is attached or supporting, then its commander's KNP is deployed together with the combined-arms commander's command post.

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During displacement, the battalion (battery) commander is obligated to maintain continuous communications with subordinate subunits so as to be ready to control fire at any moment.

Figure 1 depicts a possible diagram for control of reconnaissance, fire and maneuver of an artillery battalion.

The lines with arrows on the diagram denote the following:

←→ --Control in the direction: battalion commander-battery commander (battalion staff)-battery senior officer (SOB)-gun commander (KO);

+--+ --Control in the direction: battalion commander-battery staff-battery senior officer-gun commander;

+*--+--Control in the direction: battalion commander-battery senior officer-gun commander;

+*+*--+--Control of artillery reconnaissance subunits: radar station, sound-ranging platoon (VZR) and so on.

The battalion commander receives the combat mission from the senior artillery or combined-arms commander, after which he is obligated:

--To understand it, i.e., to understand his battalion's mission and role from the viewpoint of the general concept of the combined-arms unit or subunit to which the battalion is attached or which it is supporting;

--To estimate the situation and make a decision, i.e., to thoroughly study the enemy, condition and capabilities of his own subunits, missions of the adjacent units, nature of terrain, season of year, weather conditions and other conditions of the upcoming battle; and to plan ways for effective accomplishment of the assigned missions. In the process of understanding the mission and estimating the situation, the battalion commander plots necessary data on his work map;

--To perform ground reconnaissance (where time allows), i.e., to clarify on the terrain reference points, missions of the combined-arms unit or subunit and the decision of its commander, supplementary missions for the artillery battalion assigned by the combined-arms commander, location of the combined-arms commander's OP, methods of target designation, procedure for maintaining communications, and signals for requesting, shifting and ceasing fire;

--To assign combat missions to subordinate subunits (in the form of a verbal operation order), i.e., to indicate the codenames of local features, to indicate reference points, information on the enemy, mission of the combined-arms unit or subunit, missions of the artillery battalion, missions for each battery, method for determining the settings for firing, procedure for surveying the firing positions, the base line

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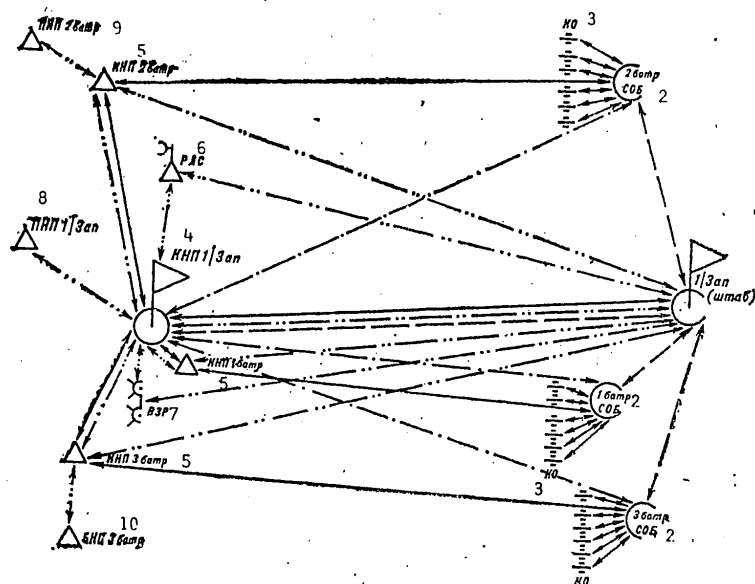


Fig. 1. Diagram of control of an artillery battalion's reconnaissance, fire and maneuver

- KEY:
- 1. 1/3 Artillery Regiment (staff)
 - 2. ... Battery SOB [battery senior officer]
 - 3. KO [gun commander]
 - 4. KNP of 1/3 Artillery Regiment
 - 5. KNP of ... Battery
 - 6. Radar
 - 7. VZR [sound-ranging platoon]
 - 8. PNP [forward OP] of 1/3 Artillery Regiment
 - 9. PNP of 2d Battery
 - 10. BNP [lateral OP] of 3d Battery

of fire, readiness time for opening fire, ammunition expenditure, location of the battalion KNP and the order of its displacement, signals for control, warning and coordination, and a number of other instructions;

--To update the procedure for coordination with the combined-arms unit or subunit to which the battalion is attached or which it is supporting;

--To deploy the battalion into combat formation and organize fire control;

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--To organize the delivery of ammunition and other supplies to the subunit;

--To check the readiness of subunits for performing the missions and to report readiness.

The battalion commander additionally gives instructions to the staff on planning the battalion's combat operations.

The battalion (battery) commander must pay special attention to coordination in combat with the combined-arms unit or subunit. To this end he is obligated:

--To have a firm knowledge of the missions of the combined-arms unit or subunit and of its commander's decision; and to clarify the codenames of local features and reference points together with that commander;

--To clarify methods of target designation, signals for requesting, shifting and ceasing battalion (battery) fire and mutual recognition signals;

--To locate his KNP together with the command post of the commander of the combined-arms unit or subunit, maintain continuous communications with him and exchange intelligence with him and his staff;

--To coordinate battalion (battery) fire and maneuver during combat with the operations of the combined-arms unit or subunit.

Operating under the direction of the battalion commander, the battalion staff carries out directions of the superior artillery staff and exercises close coordination with the staff of the combined-arms unit or subunit. The battalion staff is obligated:

--To constantly know and study the enemy and terrain; to know the location and missions of the combined-arms unit or subunit to which the battalion is attached or which it is supporting; to constantly know the location and status of the artillery battalion's subunits and to monitor their accomplishment of operation orders and instructions;

--To collect situation data, to generalize and report them to the superior artillery staff and to the staff of the combined-arms unit or subunit, and to inform subordinate subunits of them;

--To organize artillery reconnaissance, topogeodetic survey, and meteorological, ballistic and technical preparations;

--To provide the commander with control of the subunits and their fire, to ensure that he has reliable communications, and to ensure that continuous coordination is maintained;

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--To plan the battalion's combat operations; to prepare written action reports, and to direct the displacement of weapons platoons and batteries during combat.

The staff's duties also include keeping a record of ammunition expenditure and availability, checking the status of the supply of materiel, submitting requisitions for replenishing supply stocks; providing topographic maps to the subunits; and organizing commandant's service, local security and self-defense.

The planning of the battalion's combat operations is done by its staff on the basis of missions assigned by the senior artillery chief and the commander of the combined-arms unit or subunit, and on the basis of the artillery battalion commander's instructions. The scope of the staff's work is very great during this period. Matters requiring decisions in this stage include the determination of target coordinates and size (if this has not been indicated by the superior staff), the scope of fire missions, and the battalion's fire capabilities; allocation of fire missions among the batteries; calculation of ammunition expenditure for each target and establishing the sequence in the batteries' performance of fire missions; calculation of corrections for firing conditions and monitoring the accuracy of settings for fire for effect; designation of fire control signals and methods of target designation (if they have not been indicated by the senior chief); establishing the order for displacement of the KNP and a change in firing positions by batteries; working up combat documents and preparing extracts from the fire plan for the batteries.

The results of planning the battalion's combat operations are reflected on the battalion map of combat operations, in the fire plan, and in the table of computed settings for conducting battalion fire. The planning of battalion fire is continuously updated as new data and missions come in.

The following documents are worked up and kept for control of battalion fire and maneuver:

--A battalion combat operations control map (road map with march data), which reflects all matters involving the accomplishment of fire missions and maneuver;

--Fire plan giving the phases of battle, primary missions of batteries, time and method of conducting fire, ammunition expenditure for artillery preparation and support, and control signals;

--Table of computed settings for conducting battalion fire;

--Range card;

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- Reconnaissance data log;
- Reconnaissance sketch;
- Reconnaissance and fire servicing log;
- Communications diagram.

In controlling fire, the battalion (battery) commander is obligated to designate the base line of fire promptly; to personally observe the course of battle and results of fire and to adjust fire; to arrange the registration of targets (registration points); to make a decision for preparing and opening fire in the course of combat in conformity with missions received from the senior chief or the commander of the combined-arms subunit, and on his own initiative; to promptly assign fire missions to subordinates and issue commands (signals) for opening, shifting and ceasing fire; to exercise supervision over timely readiness to open fire and over the accomplishment of fire missions by subordinates; to brief the senior chief on fire missions being performed, on opening and ceasing of fire and on the expenditure (replenishment) of ammunition.

The effectiveness of control largely depends on the operating reliability of communications facilities.

Conclusion

Modern means of computer technology are becoming more and more widespread at the present time in controlling artillery combat operations. A qualitative transition is evident from the use of individual pieces of equipment to the creation of automated command and control systems on their basis.

The use of EVM, which in comparison with traditional computing instruments have a number of fundamentally new capabilities, also requires a revision of some of the methods developed for solving control problems. The following aspects in particular come to the foreground:

- Development of EVM data and mathematical support;
- An improvement in the organizational structure of artillery staffs, units and subunits;
- An improvement in the staff working methods;
- An improvement in communications gear and methods of data input into ASU.

The solution to these problems requires considerable time for readjusting staff work, training personnel, overcoming various kinds of psychological

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barriers and developing a new kind of thinking in commanders and chiefs corresponding to the present-day level of development of control facilities.

As shown by the experience of employing ASU in armies of capitalist countries and in sectors of the national economy (for example, control of production and transportation), the effectiveness of ASU often is insufficiently high specifically because of the poor quality and lack of substantiation of EVM data and mathematical support and because of the poor preparedness of the control apparatus for working under the new conditions.

One has to have a clear idea of the fact that automation presents heightened demands on all control echelons and its effect is fully manifested only when the entire control system (both the equipment and the people) functions in accordance with these demands.

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